

Rock Products

DEVOTED TO THE PRODUCTION
AND SALE OF ROCK AND CLAY PRODUCTS.

Vol. III.

LOUISVILLE, KY., JULY, 1904.

No. 4.

CEMENT CONSTRUCTION.

Growing Importance of the Industry of Manufacturing the Materials.

SKETCH OF A GREAT PORTLAND CEMENT PLANT.

The importance of Portland cement as an article of commerce is much greater than is commonly understood. Enormous quantities of it are used in the construction of bridges, bridge piers and culverts by the railroads; walls and fortifications have been built of it for ages, and just now the steel age of construction is at the turning point with cement concrete construction for the walls, floors and partitions of every description of building looming up big, like the sunrise of a new era in building operations.

The erection and development of Portland cement mills throughout this country in late years has become one of the important features of American industry, and very many millions of capital are finding employment in all parts of the country where the necessary materials for its manufacture are found in promising quantities.

Upon this page is illustrated the plant of the Chicago Portland Cement Co., at Oglesby, near LaSalle, Ill. It is one of the most complete and

perfectly equipped establishments of its kind in the world, and using this as a model we will briefly give a sketch of the company and its methods.

The Officers and the Organization.

The officers of the Chicago Portland Cement Co. are: Norman D. Fraser, president; D. R. Fraser, vice president; and Ralph Gates, secretary and treasurer, and the main offices of the company are located in the Stock Exchange Building, 108 La Salle Street, Chicago, Ill.

The factory and plant is located near La Salle, Ill., where the company controls about 2,000 acres of land, through which flows the Vermilion River, which supplies an inexhaustible amount of water. The company's properties are connected by direct switch from the factory to the line of the Illinois Central railroad, the Chicago, Burlington & Quincy railroad, and the Rock Island & Pacific railroad at La Salle; the I. I. & I. railroad, at Lostant, the C. & E. I. railroad at Joliet; the C. & N. W. railroad, at Springfield, and the A. T. & S. F. railroad, at Streator, comprising unsurpassed facilities for the movement of the product of the factory to market.

The Machinery Equipment.

The plant is equipped with the best that can be found in the way of machinery, including Gates rock crushers, Krupp ball and tube mills, rotary kilns from Vulcan Iron Works and Gates' Iron Works, Greene-Wheelock cross compound condensing engines of 1,000 h. p., B. & W. water tube boilers, electric generators, electric motors, etc. Electric power transmission is used largely for the machinery throughout the mill and in the

quarry and compressed air drives the quarry drill.

So equipped the Chicago Portland Cement Co. is prepared to manufacture and deliver 400,000 barrels annually, and the buildings and power are designed for conveniently increasing the capacity by 50 per cent.

Materials for Making Cement.

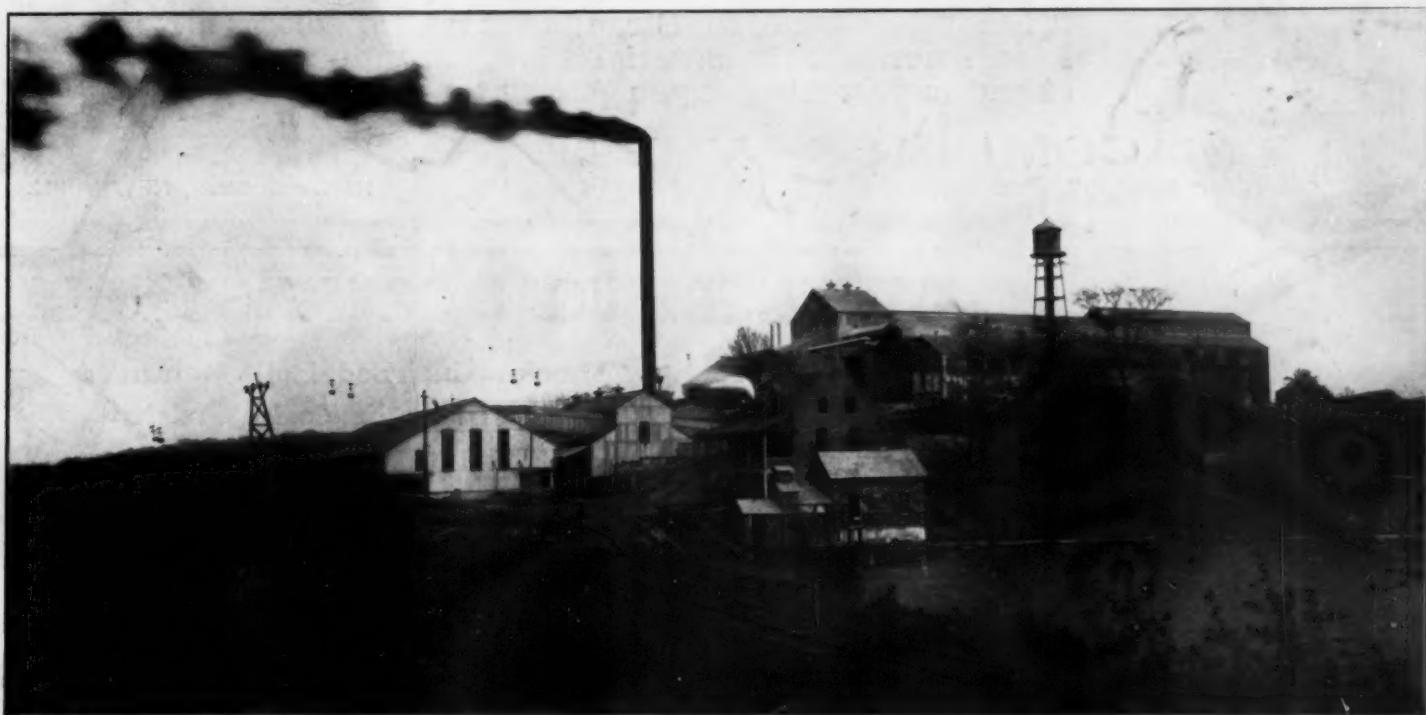
Lime rock and shale clays are the raw materials for making the "Chicago AA" Portland cement (which is the brand adopted to designate the product of this company). These materials lie very uniformly throughout the company's property, and no more favorable material for making Portland cement is to be found in America.

Analysis of the Materials.

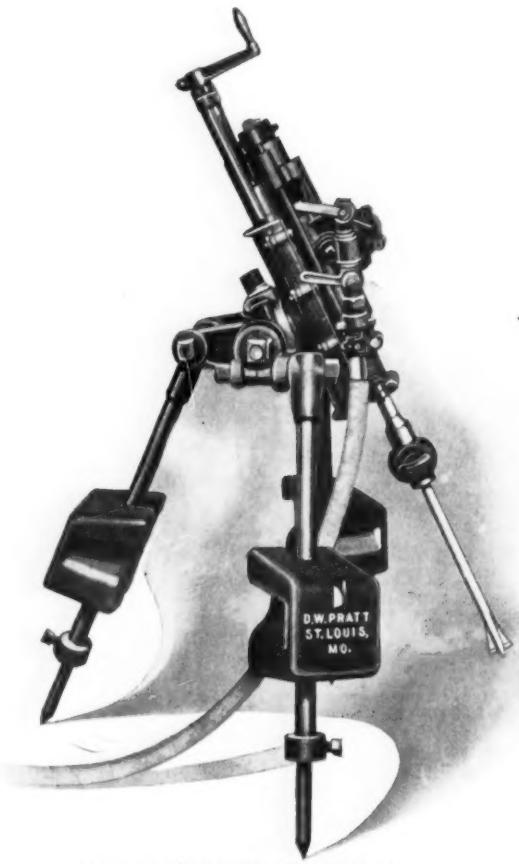
	Limestone.	Clay.
Silica.	6.06	53.12
Alumina.		20.60
Iron Oxide.	3.92	4.09
Lime.	49.46	4.02
Magnesia.	.91	2.24
Sulphuric Anhydride	.10	
Ignition loss.	39.06	13.70

The company maintains a laboratory which is admirably equipped for making analyses and physical tests, and is in charge of a competent chemist who makes frequent chemical tests of the raw material. The finished cement is also tested daily for fineness, soundness, setting and tensile strength, and no cement is allowed to leave the works unless it meets all the requirements of a first-class test.

(Continued on Page 31.)



PLANT OF THE CHICAGO PORTLAND CEMENT CO., NEAR LA SALLE, ILL.



PRATT'S IMPROVED ROCK DRILL.

D.W. Pratt

Machinery Company.

No. 614 North Third Street,

ST. LOUIS, Mo.

DESCRIPTION OF ROCK DRILL.

THE VALVE, which is the most important part of a rock drill, is of the Corliss or Rotary design and retains a perfectly steam or air-tight seat under all conditions.

Its movement is ABSOLUTELY and PERMANENTLY POSITIVE under any pressure. IT WILL START AUTOMATICALLY AT ANY PART OF THE STROKE. It will run at any speed desired, whether the VERY FASTEST or the VERY SLOWEST without danger of stopping. It will require LESS STEAM or AIR to do a given amount of work than any other drill, the valve being so constructed that the piston is POSITIVELY REVERSED.

It has a variable stroke and can be used at a stroke where others fail; this being one of the essential qualifications of a good drill, especially in starting a hole or working through seams. It strikes a very hard blow and its recovery is instantaneous. It has no peer as a mudder.

Our drills are made of the very best material the market affords, by skilled workmen, and with new and improved machinery, and particular care has been taken to make them the best on the market. All parts are interchangeable.

Complete plants of Machinery for Mines, Quarries and Contractors.



TRADE MARK REGISTERED.

"MONARCH WIRE ROPE"

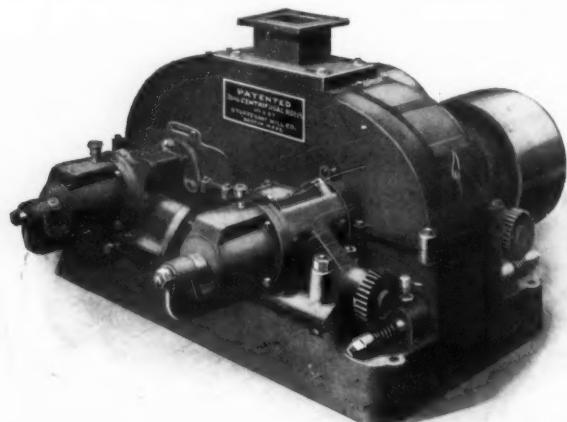
The Most Desirable Rope made for
Quarry and Contract Work. & &

It is not the color of the Strand that makes Monarch Rope so superior, but the material it is made out of. The Whyte strand merely ensures you getting the right rope.

MACOMBER & WHYTE ROPE CO.

19 and 21 South Canal Street, CHICAGO.

131 Worth Street, NEW YORK.



CENTRIFUGAL CRUSHING ROLLS

Crushing Shocks Absorbed, Rolls Balanced,
SHELLS ONLY move back in Crushing.

SEND FOR CATALOGUE OF

**Crushing and Grinding
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**STURTEVANT MILL CO., BOSTON,
MASS.**

Tell 'em you saw it in ROCK PRODUCTS.

LEADING PRODUCERS OF BEDFORD OOLITIC LIMESTONE.

We are producers of Buff and Blue

AUDITORIUM HOTEL AND ANNEX, CHICAGO.

Bedford Oolitic Limestone,

Sawed, Turned and Machine Dressed.

OOLITIC STONE CO. OF INDIANA.

CONTROLLING

THE BEDFORD QUARRY CO.

AND THE NORTON-REED STONE CO.

ROBERT REED, Sec'y-Treas.

BEDFORD,

INDIANA.



The Above Buildings Were Erected From the Buff Limestone of Our Quarries.

Perry-Matthews-Buskirk
Stone Company,QUARRYMEN
AND...
SAWYERS.

CELEBRATED "P. M. & B."

BEDFORD STONE

Dimension and Mill Blocks.
Sawed Stone and Planed Mouldings.

LARGE TURNED COLUMNS A SPECIALTY.

GENERAL OFFICES:

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Quarries and Mills:
BEDFORD, INDIANA.

CHICAGO.

Eastern Agents:
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Fuller Building,
NEW YORK, N. Y.

BEDFORD STEAM STONE WORKS

QUARRYMEN OF

BEDFORD STONE



TURNED AND FLUTED.

Size, 22 ft. 6 in. long x 2 ft 8 in. diameter.

Rough, Sawed, Planed and Turned.

TURNED WORK A SPECIALTY.

Shipping Facilities: C. I. & L. Ry. So. Ind. Ry.

BEDFORD, IND.

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CUT STONE WORKS.
BUILDING STONERustic Monumental Work is Our Specialty.Our design book containing
52 designs, price . . \$1.00

BEDFORD, IND.

Indiana Bedford Stone Co.,

MILL BLOCKS and
SAWED STONE.....Complete Stock of Seasoned
Buff Stone and Quick Service.

BEDFORD, IND.

MAHAN & COMPANY
Bedford StoneBlock, Sawed, Planed, Turned and
Monumental Stone.CHICAGO OFFICE.
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BLOOMINGTON, INDIANA.
Write us for Prices.

Allis-Chalmers Co

CHICAGO



Bullock

Electrical Apparatus
for all purposes.

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O'CONNELL & FEELY'S
 CHEMICAL PROCESS FOR
Hydrating Lime.
 FULLY COVERED BY PATENTS.

Requiring only a small amount of machinery, it is most simple and economical in working and most perfect as to results obtained, making thoroughly HYDRATED LIME by QUICKEST and CHEAPEST known process. It requires no Bolting Reels, Screens, Mixing Machines or Storage Bins, and can be readily installed in any lime house, adjoining a lime kiln. It is, therefore, not very expensive to install, and is within the reach of all manufacturers of lime.

Two years of critical use by one of the largest firms in the City of New York, have proven the product so thoroughly satisfactory that said firm has arranged to take all the output of two plants using the O'Connell & Feely Process.

The process can be seen in operation at the plant of the James O'Connell Lime Co., at White Plains, N. Y., 22 miles from the New York City Post Office. Also at the plant of O'Connell & Hillery Company, Tuckahoe, N. Y.

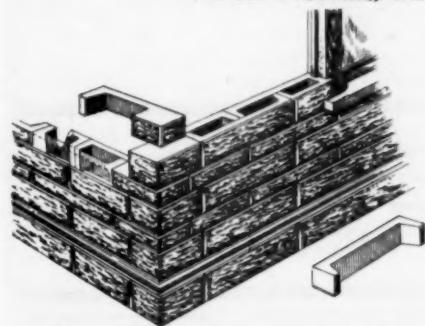
Now is the time for considering the installation of a plant to hydrate your lime and I earnestly solicit your correspondence thereon. A Sample of HYDRATED LIME made by the O'Connell and Feely Process will be gladly mailed to parties wishing same, on receipt of application therefor.

FOR SALE—The PATENT RIGHTS for Canada and England of the O'Connell & Feely Chemical Process for Hydrating Lime. This is a business opportunity without parallel. Address,

JAMES O'CONNELL,
 651 W. 131st. Street, New York, N. Y.

Fisher's Hydraulic Stone System,

W. H. FISHER, Patentee.



Architects recommend it.
 People are delighted with it.
**A Sure
 Money
 Maker.**

We have solved the building material question. Every block a perfect one, because the tamping is done by hydraulic pressure and automatic hydraulic kneading, which drives out all of the air and closes all of the voids. The machine is entirely automatic and the process such that the necessary chemical reaction is not hindered. All shapes and designs, veneer blocks for frame structures, angular blocks for hollow walls. Walls built from our block are absolutely sanitary. We make thousands in a day, large profits are beyond question. Our product is in constant demand. This is the only system which at once removes the brick from the iron or wooden mold, thus giving the hardening process the greatest possible freedom. A plant can be seen in full operation at Memphis, Tenn., where the Memphis Hydraulic Stone Co., have one of the finest up-to-date plants in the country.

**ALL MACHINERY GUARANTEED
 FOR ONE YEAR.**

WRITE FOR TERMS OR INFORMATION

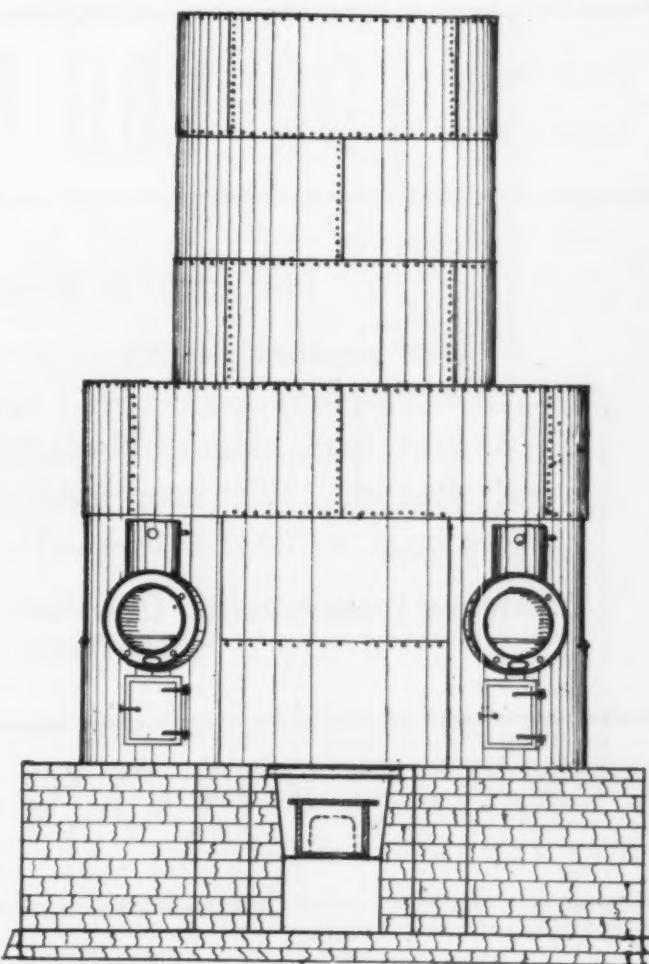
No. 384 Second Street,

MEMPHIS, TENN.

Tell 'em you saw it in **ROCK PRODUCTS.**

**James O'Connell's
 Patented Boiler Arch and
 Continuous
 LIME KILN.**

Built on stone foundation, 6 feet high. Solid brick kettle, capable of fully withstanding weight of falling stone. Only kiln with inside arches, thus confining all heat and avoiding loss from radiation. None of the usual repairs on outside of fire boxes caused by expansion and contraction. No burning out of iron work around fire boxes. If outside shell of kiln is painted twice a year with coal tar there is absolutely no wear-out of the iron. Adapted to burn soft coal, crude oil and wood.



OUTSIDE VIEW OF BOILER.

Turns out more lime, with same heat, than any other kiln. Draft is always regular and under control, regardless of weather. Same heat that burns lime-rock makes steam to operate conveyor carrying stone to top of kiln, about 50 feet high, and also serves to pump out quarries if situated within reasonable distance, AND ALSO MAKES THE STEAM TO RUN THE BLOWERS WHICH PRODUCE THE COMBUSTION TO BURN THE OIL OR SOFT COAL. Boilers always carry full dry head of steam, and arches do not burn out where boilers are placed in. This patent will save you at least 20 to 30 per cent. on burning lime. Only kiln in market to-day turning out perfect product at reduced cost, doing its own work and running as nearly automatic as possible. This kiln burns either lime or cement rock.

THESE BOILERS CAN BE FITTED IN THE ARCH OF ANY KILNS
 ALREADY ERECTED.

JAMES O'CONNELL,
 651 W. 131st St., New York, N. Y.

HARRISON SUPPLY COMPANY, 34 India Wharf, BOSTON, MASS.

Chilled Steel Shot

For Sawing and Rubbing Granite, Freestone and Marble. Warranted Superior to all other brands. A Large Stock Constantly on hand.

Also Carborundum, Emery, Puttypowder, Etc. Supplies of all kinds for Granite Polishers.

GRANITE STAIN ERADICATOR

Which we guarantee will permanently remove iron, sap, and oil stains from granite without injury to the stone.

Every hand polisher of Granite and Marble should write for information regarding our "Combination Box."

SAMPLES AND PRICES UPON APPLICATION.

NATHAN C. HARRISON, General Agent.

SAND LIME BRICK

National System.

Lime Hydration

Colonial System.

Tinlay Sand Dryer.
Clay Working Machinery.

National Brick Machinery Co.

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Eldred Process
Hydrated Lime.

DO YOU BURN LIME?

Burn by the
Eldred Process.

The Eldred Process for Burning Lime

Will produce profits where old methods fail. Will displace wood with bituminous coal. Will save 25 to 60 per cent on fuel account. Will burn better lime. Hydrated lime will regain ground lost to hard wall plaster. Will keep indefinitely and can be shipped in cloth or paper bags without deterioration. * * * * *

Mechanical Problems Solved, Lime Plants Designed and Remodeled. Complete Laboratories for Testing and Analytical Work.

BYRON ELDRED,

MECHANICAL ENGINEER.

BOSTON, MASS.

BRICK MACHINERY.



The Best Machinery for the manufacture of the best product. The quality of our machinery insures the quality of your brick and freedom from repairs. Machinery for the manufacture of clay products by all processes.

THE AMERICAN CLAY-WORKING MACHINERY CO., BUCYRUS, OHIO.

BURIAL VAULTS

No Artificial Stone Plant is complete unless they manufacture the Parry Patent Burial Vault. Perfectly air-tight and water proof. Secure your county on royalty. A money maker. Address

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431 W. Main Street.

LOUISVILLE, KY.

Tell 'em you saw it in ROCK PRODUCTS.

Rock Products

DEVOTED TO THE PRODUCTION
AND SALE OF ROCK AND CLAY PRODUCTS

Entered as second-class matter March 4, 1904, at the Post Office at Louisville, Ky., under the Act of Congress of March 1879.

THE FRANCIS PUBLISHING CO.

Publishers.

E. H. DEFEBAUGH, President and Manager.
FRED W. RUGG, Secretary.

A monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganese, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper; so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

"TELL 'EM YOU SAW IT IN ROCK PRODUCTS."

SUBSCRIPTION RATES, \$1.00 per annum, postpaid anywhere in the United States, Canada or Mexico; \$1.50 elsewhere in the Postal Union. Single copies, 10 cents.

ADVERTISING RATES will be furnished on application.

ADDRESS ALL COMMUNICATIONS TO

THE FRANCIS PUBLISHING COMPANY,

431 W. Main Street, Louisville, Kentucky

BRANCH OFFICE, NEW YORK CITY:

Room 502, 136 Liberty Street,

ALEXANDER CRISTADORO, Manager.

LOUISVILLE, KY., JULY, 1904.

Don't Fall to See Moses!

"WHAT does that mean?" is a question frequently asked by parties who have seen our invitation to call at Block 20, Aisle A, Palace of Mines and Metallurgy, at the St. Louis Exposition. The name Moses is synonymous with the message he brought upon the tables of stone from out of the thunders of Mount Sinai, and has been considered the corner stone of civilization, the accepted fundamental rock of truth that has withstood the tides of ages directing the course of human events upward and ever onward to higher things.

We have chosen Moses as the symbol of our mission in the quarry, stone, and monumental lines as well as the manufactured products of the rock, and as Moses led his people into better things, it is our hope from time to time to elevate, promote and bring prosperity to every member in every branch of the industries which we represent—always, with your assistance.

An Intelligent Price List.

One of our valued readers seconds the suggestion of several others in the past, that in the future Rock Products furnish to the trade, a list of prices on different material in the market, either monthly or weekly. We would be glad to do this if some one could guarantee the veracity of all the people in the business. Price lists are a good thing if they mean anything. They are even good things when they are five or ten per cent. above the market price and people are supposed to stick to them, but they are certainly a very troublesome proposition.

It is true that price lists, even if a little high, are good things for the majority of the people in the business. It makes it possible for them to

compare notes and more intelligently conduct their business. One of the troubles in the stone business to-day is that there are many operators of quarries who are not in touch with the market. They don't know what the stone is worth, or what it costs them. They only know that the labor costs so much and that a long time ago they paid so much for the quarry, but there is no profit in the business if you don't know the details of cost of production and market value of the product. If you don't agree with our way of reasoning on this subject, investigate it. Try it on yourself. There is trouble in store for the producer if some basis of price, or more intelligent competition is not at work. With the prospects of a grand volume of business not excelled by any craft, it behooves every member of the trade to do his part to put the business on an intelligent, up-to-date and profitable basis. Are you willing to do your share?

National Standard Measures Established.

One of the most advantageous as well as interesting systems recently organized by the new Department of Commerce and Labor is the National Bureau of Standards in which all the units of measure of every description, including thermometers, clocks, steam and air gauges, gas meters, scales, yard sticks and foot rules will be compared by a national established standard. It is surprising that this government has never taken any steps in this direction up to the present time, because the metric system of the French government has been such a signal success. But, now we have tackled the proposition it is to embrace standard measures for use in every kind of dimension, not stopping as the Frenchman did with the lineal and the cubic measures alone.

The new bureau is to be provided with a commodious building, and supplied with all the necessary materials and appliances for comparing and correcting every kind of measuring device. Heretofore there has been no standard of candle-power for electric apparatus, but this, along with the rest will now be established, so that everything which is measured or weighed can be intelligently understood by description. This will be an invaluable contribution to mechanical engineers in every line, as well as a great convenience to every citizen of the whole nation who buys and sells by measure or by weight in such a great variety of ways.

THE popularity of hydrated lime is spreading. BUILDING stone operators report business very quiet.

FOURTY per cent. of the material in rubber tires is kaolin.

PORTLAND Cement Plaster for exterior work is a success.

REASONABLE prices induce increased building operations.

GRANITE men are showing an increase in volume of business.

THE wooden lath is having a hard time holding the supremacy.

THE increased sale of clay products is pleasing to the brick man.

THE progress being made in the manufacture of artificial stone and brick is marvelous.

CURTAILMENT of production in building material lines will aid the price situation.

WASTE in the stone yard is worthy of your consideration. It costs you money every day.

THE estimator is having a busy time, which indicates that Fall business will be more active.

THE open shop is the only satisfactory one for employer and employee, union or non-union.

WHEN you find a man too busy to read, he needs looking after. His leaks will exceed his profits.

ARCHITECTURALLY our big cities are beginning to compare favorably with those of the Old World.

IT is pleasing that each day's mail acknowledges the efforts of ROCK PRODUCTS in the trade.

Now that Carrie Nation is after the stone man there is no doubt there will be something doing.

THE business man who persistently keeps before him the maxim of "Live and let live" will be a success.

STIR up your collections, thus enabling you to pay your small bills, and you will aid to finance the world.

THE architectural beauties at the World's Fair should encourage every man in the stone business to visit it.

ANY man who thinks business is going to pot ought to visit some of the big cities and note the number of buildings going up.

THERE was a testing session at Atlantic City the other day when the engineers got together. Good will come out of Israel, however.

THE substitution of cement for brick sewerage will help bust up the unions and incidentally increase the volume of business on cement.

IT takes all kinds of people to make up a world and their tastes all differ, but a well cut design shows up like an artistically painted picture, and it is easier to get the price.

UNIONS are beginning to acknowledge the "machine," and they will be just as happy over the "open shop" when they realize it is here to stay and there is no getting away from it.

THE interesting information furnished in wild-cat cement operations in the press will no doubt continue to discourage boom companies in the business, and manufacturers will be able to work on legitimate lines.

THE mosaic paving used in France will in time get a hold in the States. Its cleanliness is an incentive to keep it clean, and the fact that it is not expensive, being colored cobblestone laid in a pattern, ought to encourage its use.

ACCOUNTS which reach our office giving the details of street and sewer improvements in the various cities and towns throughout the country, indicate that there is no abatement, but rather an increase in such improvements, and the scale of such operations is increasing in size all the time, creating an enormous demand for materials of this character.

IT is likely that the responsibility for the lack of surplus in building lines is due to many operators thinking that it is more profitable to do the details around an office or shop rather than spend his time in reading about the latest developments in the methodical conduct of business. A man who won't read a trade paper is as bad off as the man that can't read. He is not up-to-date.

THE wealth of this country of ours is distributed in large chunks and the stone man should get a good slice of it, for when a man gets to be a millionaire, he wants to live in a palace. There is no reason why he shouldn't be satisfied with the latest designs in stone. Some of the craft will never get any more money in their pockets if they don't get a hustle on them and bring out their good ideas and work them up.

ST. LOUIS=The World's Fair City.

The American Leads Christian Civilization.

ST. LOUIS, Mo., June 18.—A visit to the Louisiana Purchase Universal Exposition will suggest to one who cares to think of the conditions that surround him in this great country of ours that its magnitude, its magnificence, its wonderful conception and gigantic accomplishment is nothing if it is not an index to the advancement, progress and development of the unparalleled resources of a great country, the home of a great people, which may be said to be the composite product of the advanced civilizations of Europe, and as such, the peer and superior of all nations—the farthest advanced in the pathway of civilization as we know it, according to the ideas that sprang into being with the dawn of the Christian era.

National Expositions the Milestones of Progress.

It is easy to remember the Philadelphia Centennial, when in knickerbockers we viewed the greatest exposition that the world had ever known up to that time. Held in the old "Cradle City" of this republic, it was erected and dedicated to commemorate the signing of the Declaration of Independence, and we celebrated the one-hundredth anniversary of the birth of the nation, whose first decade had been a blank and was consumed without progress under the grinding heel of external wars and internal strife.

In 1893 the Chicago World's Fair was an exposition of similar character, upon a scale so much larger and grander in detail that it has been said one of the Chicago buildings could cover the entire group which composed the Centennial Exposition in Philadelphia, at Fairmount Park. The progress of seventeen years, from 1876 to 1893, was fully expressed by the increased magnitude and grandeur of the World's Fair.

At that time we imagined that American enterprise had reached the pinnacle of conception and performance in the way of a national entertainment. The verdict of the world confirmed us in this opinion, and it is a conspicuous fact that no people of any other nation have since attempted to outdo that marvelous American effort—save the possible exception of the volatile and effervescent Frenchman who celebrated the birth of the present century, modestly acknowledging that their exposition would be equal to the World's Fair.

American Can Only Excel Himself.

So, it has remained for the American to outdo no other, but to outdo his own high attainments. And this of itself puts the American in a class by himself, for when he must excel the best that has occurred, he only tries to exceed his own best efforts. Taking the World's Fair at Chicago as the

highest possible example of American conception and achievement then, it is remarkable what stupendous improvements have been accomplished in the eleven intervening years between 1893 and 1904.

Our National Sacred Relic.

It was our privilege to be present in St. Louis when the old Liberty Bell from Independence Hall in Philadelphia arrived at the Exposition grounds. There was a vast concourse of patriots to receive the sacred relic whose voice, now silent forever, so long ago pealed forth the message of peace, freedom and equality to all the peoples of this land—striking then the key-note for a swelling symphony which has spread in widening waves, until that same message now reaches to the Pacific shore, and even to the islands of the sea.

When this old bell delivered its message to the hardy farmers scattered along our Eastern coast, the very ground where the Louisiana Purchase Universal Exposition is held was the domain of a foreign country; and this is the first occasion

ing the National Anthem—truly a tribute from America's latest acquired territory, doing honor to the parental stock upon the ground first acquired by national expansion.

Too much has been written and said about the Exposition now in progress to need any description here, but we will exploit the details from time to time in these columns. This sentimental digression is merely a side glance at the great Exposition, or the way it occurs to one who looks for the lessons contained in the efforts of men and nations. We illustrate a glimpse of one of the prettiest vistas at the whole Exposition. It consists of a park of flower gardens between the Palace of Liberal Arts and the Palace of Mines and Metallurgy and running up to the United States Government building. Numbers of settees are placed at convenient intervals—a resting place for the busy sight-seers who attend the Exposition; and who can tell what lovers' tales will be whispered in the shade beside those flower-beds, with the music of the fountains to suggest soft, flowing words—couplets of poetry, with the grace of ease.

The Newest Idea Developed.

The Tyrolean Alps which is one of the wonders of the age, and the Pike with its multitude of attractions will not fail to be one of the most interesting and enjoyable features of the Exposition. They are too exquisitely American in conception to be overlooked. The American, who as everybody knows is fond of his sports, knows how to get them, and after he has them, knows how to dispose of them, will heartily enjoy these features.

From the standpoint of the industries of the country, by the illustrations which we herewith present, it will be seen how creditably the interests are exploited under the various classifications, but as illustrations such as these speak for themselves, no further comment is necessary.

"Be Sure and See Moses."

There is nothing but commendation and praise for all the enormous undertakings and the way it has been worked out and completed, and it is a pleasure to see that the lines represented by ROCK PRODUCTS are in the fore front, and on a par with anything else in the great exposition.

Imbued by and in accord with the great American idea of co-operation, ROCK PRODUCTS has placed a modest, though original exhibit in the Palace of Mines and Metallurgy, and when we invite you to "be sure and see Moses," it means that we are helping the exposition, that we are out in the front, where we always mean to be, the real exponent of the package industry of this great country of ours.

From time to time during the exposition we will place illustrations in our columns and exploit the progress and advancement that has been attained in this magnificent symbol of the co-operation of American effort at the beginning of the Twentieth Century.

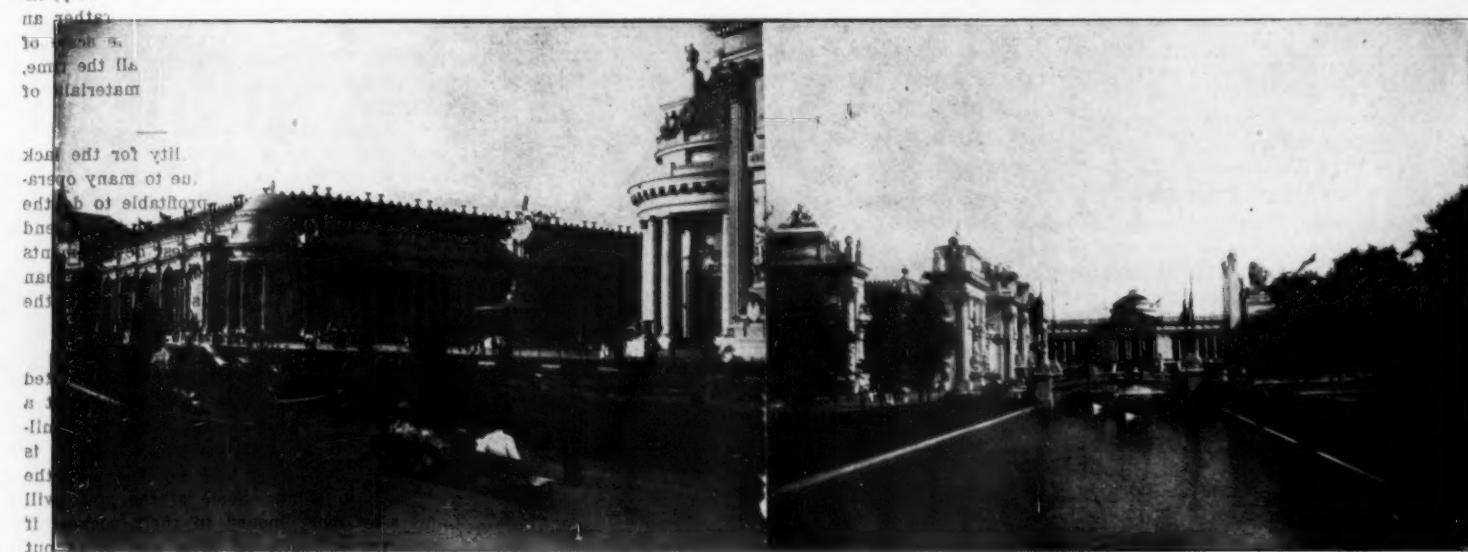


Architectural Gem, Liberal Arts Building.

that it has ever crossed the Mississippi, or been out of that portion of our country which was included in the first settlement of treaties that gave us national life and a position among the nations. So the old bell, for the first time upon acquired territory, was also celebrating American advancement, just as much as any member of that vast assembly who clambered into favorable positions for paying their respects to hallowed memories.

Military Escort of Honor.

Liberty Bell was received on the Exposition grounds with an escort of honor, composed of detachments of the United States Army and corps of cadets from a number of military schools, and among them was a regiment of Filipinos regularly enlisted in the United States Army, carrying the "Stars and Stripes" and with their band play-



GLIMPSE OF THE FLOWER GARDEN WHERE LOVERS LINGER.

LAGOON LOOKING TOWARD THE GOVERNMENT BUILDING.

CONDITION OF THE TRADES.

ST. LOUIS, June 25.—A steady increase in the attendance at the Louisiana Purchase Exposition proves the growing interest that the country at large is taking in the great effort of the old city of St. Louis. Every visitor goes away a missionary to tell of the magnitude of our Fair, of the ideal weather we are having, of the perfection of our city transportation, of the ample accommodation for visitors and of the moderate prices that prevail. The willingness of our citizens to let rooms at such a low price as one dollar per day has relieved the strain upon hotels so that these latter are able to take care of their usual guests, such as commercial men, merchants, etc., in the regular way and at the regular rates. As an instance of the very reasonable prices that are to be found here, I may mention the case of an acquaintance who occupies a prominent position in one of our great cities and is here for a month with his wife. They have a furnished room in an excellent apartment house in a first-class neighborhood and the rent for this room is only \$15.00 for a month. When two citizens of such standing as the secretary of one of our well-known exchanges throws open his house to visitors, who come with an introduction, and for a merely nominal charge, it must be admitted that St. Louis is not trying to exploit the stranger within her gates. For this she will certainly gain her reward later in the reputation for fair and friendly dealing that will be carried to all the corners of the earth.

Resuming Business Standards.

Building permits to a good amount have been issued during the month of June, but actual operations have not been active. These are not likely to be very active for some time, although rows of dwellings are being commenced by several owners of real estate. Prices have come down to

a level that will justify building operations and wages have come down too. A case in point is the Laclede Fire Brick Co., which is currently reported to have made a reduction of ten per cent. in the wages of its workpeople. This is reasonable, for it would have been impossible to continue indefinitely paying World's Fair prices for labor. Other firms in our lines who have not already done so will certainly follow suit. Whether this will be resisted or not by the labor organizations remains to be seen. There is some anticipation of labor difficulty, but it is to be hoped that the men will be reasonable, for although good wages all round are desirable and are a sure indication and accompaniment of prosperity, there is a reasonable limit. This reasonable limit was certainly passed when the commonest kind of colored labor in a brick yard was paid \$2.25 per day, as I know to be the case.

The Cement Pavilion Still Unfinished.

Out in the Mining Gulch where the outside exhibits are connected with the Palace of Mines and Metallurgy, some of the exhibits are still incomplete. One that is of main interest to us is the cement pavilion, the exhibit of the Association of Portland Cement Manufacturers of America. This was to have been finished by the latter end of June and had made considerable progress, when the style of the work, or rather the exterior surface, was found to be unsatisfactory and the whole thing was torn down again to the foundation. The objection was that the planks forming the moulds in which the concrete was rammed, did not make close joints so that the surface of the concrete was uneven, the water draining out of the open joints carried the fine cement to them and the monolithic appearance of the work was marred. The moulds will now be of seasoned wood, tongued and grooved and oiled. It might be of interest in this place to recount my own small experience in monolithic construction. I had in the year 1877, to erect several small buildings 12 ft. by 15 ft., and 12 ft. high, with two doors in each, but no windows. The buildings were to be used as stores for explosives. I made my moulds of the commonest, rough, 1½ in. planks, covered with galvanized sheet iron, flat of course, not corrugated. I got the thinnest iron on the market.

My recollection is that it was 28 gauge. The result was quite satisfactory.

Since there has been so much delay it is possible that no attempt will be made to hasten the completion of the work, but that it will be carried out as a continuous exhibit of a building process.

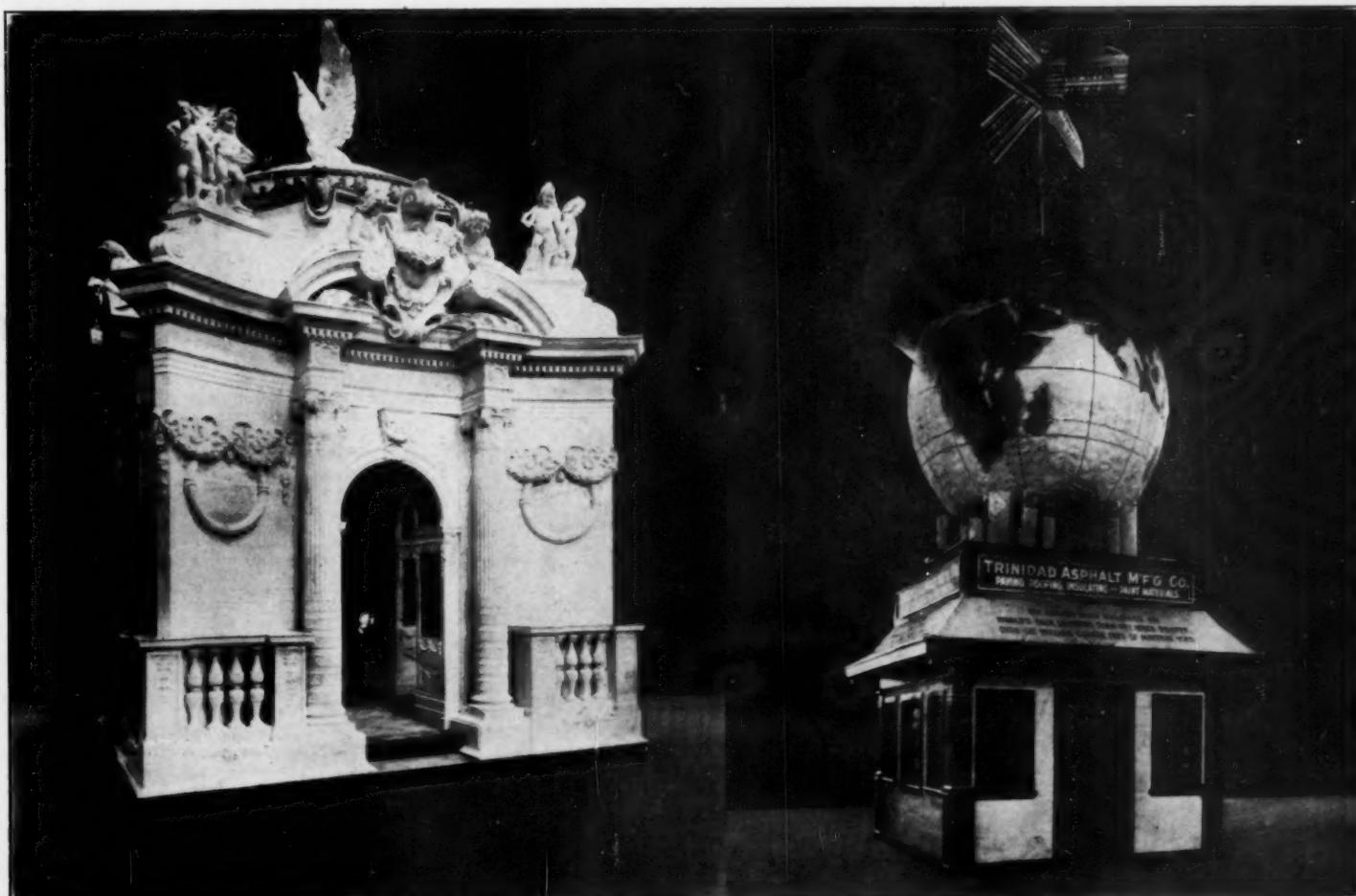
Mr. Richard L. Humphrey, of Philadelphia, a well-known Portland cement expert, who was city cement testor for Philadelphia, is now in St. Louis and will make arrangements for the testing laboratory that has been decided upon in connection with the National Association's cement exhibit. Mr. Baffey, American manager for the Hennebique Construction Co., of Paris, is also here for the monolithic construction.

The Feature of Hollow Cement Construction.

Out in the Mining Gulch, near the cement pavilion, the Furman Construction Co., Detroit, Mich., will have a small structure to show the company's cement roofing tile: "New Era Cement Tiling." Other exhibitors will be, the American Hydraulic Stone Co., Denver, Colo., with some cement hollow blocks, this company also has a machine in operation, making cement blocks, near the wireless telegraph station. Continuing in the Mining Gulch we have, Stevens Cast Stone Co., Chicago. This company has an exhibit of cement building blocks. J. A. Mitchell, Hillsdale, Mich., shows cement fence posts and building blocks. In another place artificial stone made by the Winget Process is shown. Louis A. Risso and William Klein, engineers from New York, will exhibit a filtration scheme in concrete and artificial stone. The Municipal Engineering and Construction Co., Chicago, shows cement mixers mounted with engines. The Linn-Hart Manufacturing Co., Bloomington, Ill., has examples of cement block machinery. Col. E. Bright & Co., Columbus, Ohio, have an exhibit of cement concrete block machinery. The Raymond Concrete Pile Co. exhibits the well-known artificial piles.

Going back to the Palace of Mines and Metallurgy, we find the Cement Machinery Co., Jackson, Mich., is installing an exhibit of cement, concrete blocks, block machinery and devices. Mr. Wm. F. Cowham is general manager; Mr. S. L. Wiltre, the secretary is in charge of the exhibit.

(St. Louis continued on Page 16.)



NORTHWESTERN TERRA COTTA CO., CHICAGO.

THE WORLD'S FAIR ROOFERS.

CHICAGO TRADE GOSSIP.

Henry Struble & Co., stone cutters, 293 to 307 Fortieth Street, Chicago, Ill., a photograph of a few of whose men taken in their yard, we illustrate here, are one of the largest firms in the city and their yard extends through to the Chicago junction railroad tracks. Henry Struble, the head of the firm, whose photograph we also reproduce, was born in South Livonia, N. Y., on a farm and was brought up there and educated in the public schools. After a year spent in Michigan, he came to Chicago in 1882 and secured a position as timekeeper with the Diamond Stone Co. He was with them ten years, and resigned in the spring of 1892 to form the firm of Gindel & Struble, where he stayed five years. In 1897 he started business as Henry Struble & Co. Beginning with no business at all he has succeeded in building up one of the largest in his line in Chicago, and is well-known throughout the country for his sterling qualities and business ability.

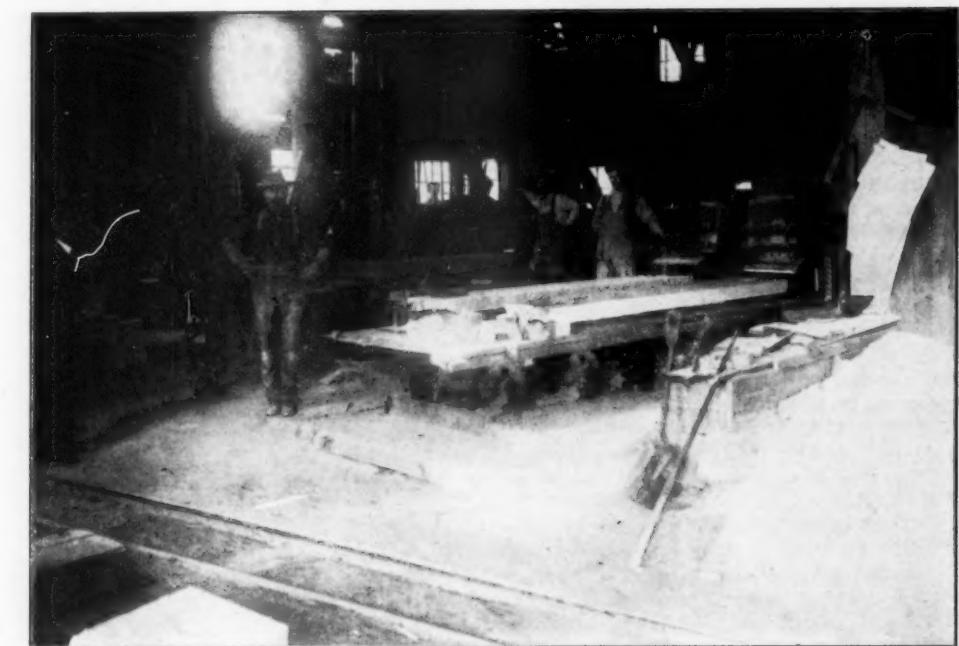
Among the more important jobs they have finished in recent years are the Academy of Science in Lincoln Park, the Van Buren Street Station, of the Illinois Central railroad suburban service; and a number of public schools. They are just finishing up the Carnegie Library at Mason City, Iowa; Carnegie Library at Spencer, Iowa, Spies Library at Menominee, Mich.; and, last year they finished the addition to the government building at Kalamazoo, Mich.

This yard is well equipped with handling machinery, and they maintain their own machine shop and do all their own repairing. They have a Corliss engine and boiler of 150 horse power, three gangs of saws, two overhead travellers, steam crane and double and single planer, being well equipped to handle the largest kind of job. They employ about fifty men.

John Tait, 3347 to 3401 La Salle Street, Chicago, Ill., is one of the old settlers in Chicago, having come here in 1866 from Edinburg, Scotland, where he was born. He started in business in 1871, and now has a very large yard, 300x150 feet, where he conducts one of the largest business in the city.

Among other jobs he has done is the Commonwealth Electric Power Plant at Twenty-second and Fisk Streets, which, when finished, will be the finest electric plant in the world; the Normal School Teachers' College, and the Holy Angels' Church, as well as the Armour dwellings.

Mr. Tait is ably assisted and seconded by his son, David L. Tait, who is also agent for the Brainerd, Shaler & Hall Quarry Co.'s celebrated



VIEW IN THE MACHINE SHOP OF JOHN TAIT, CHICAGO, ILL.

Connecticut brown stone, which has many excellent qualities and is well known throughout the country as a durable stone, one easy to work in every way. They employ about thirty-five men. Our illustration is a corner of their machine shop.

Furst & Fanning, 69 to 67 Hawthorne Street, Chicago, Ill., who are successors to Jacob Furst Sons, are one of the oldest and largest firms of cut stone contractors in Chicago, the firm having been started by Jacob Furst in 1866. Their yard covers an acre of ground and they employ fifty to sixty men. They have three planers, one Nibbing bed, two gangs of saws, two circular saws and three travellers among their equipment.

They have just finished the Thompson Memorial Library in the Vassar College grounds at Poughkeepsie, N. Y.; the Law School University of Chicago; the Tower group of buildings, University of Chicago; which is conceded to be the finest group of buildings on the grounds; the Chicago Athletic Club and Young Men's Christian Association buildings are jobs they did some years ago.

A. F. Gibson & Co., 3301-3327 La Salle Street, Chicago, Ill., is one of the old established firms of stone cutters in Chicago.

Mr. A. F. Gibson, the senior member of the firm, was born in Glasgow, Scotland, coming to the United States in 1868, first settling in New York and coming to Chicago in 1872. George R. Gibson, his son, is the other member of the firm and while he has lived here practically all his life, he was born in Scotland, during a visit of his parents to the "land o' cakes."

They employ about thirty-five men and among the more notable jobs they have finished recently are St. Mary's School, Evanston, Ill., and the Gustafson apartment building in Chicago.

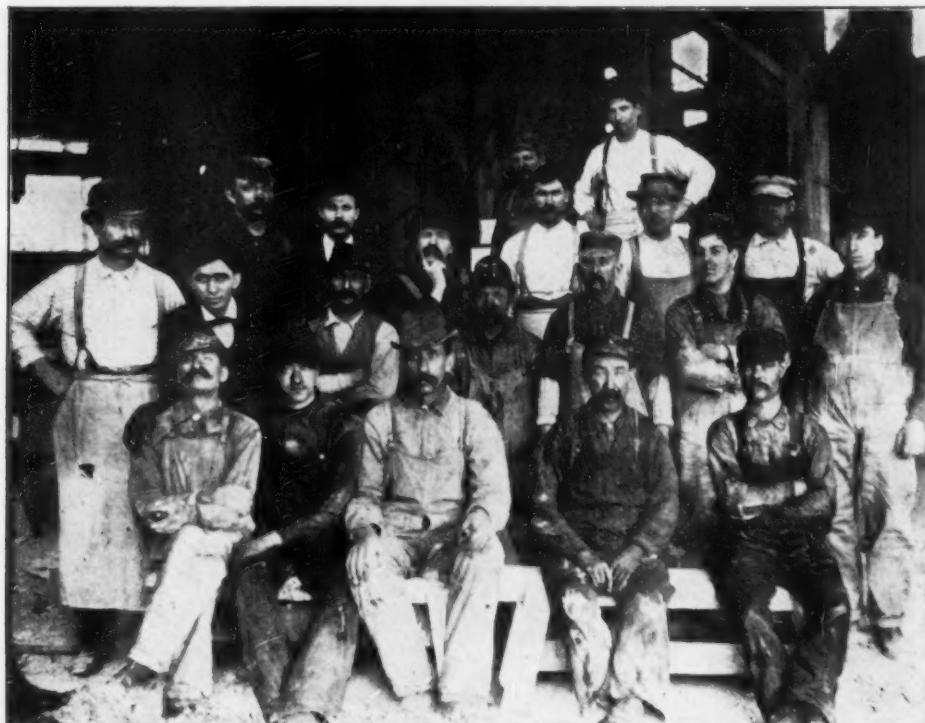
Davidson Bros. Marble Co., of Chicago, have been very busy and have lots of orders on hand. They are doing the work for the San Francisco Postoffice and have a number of other large jobs in different sections of the country.

THE CEMENT INTERESTS.

The cement department of the Illinois Steel Co., The Rookery, reports business as being very good at the present time, their entire output for the next sixty days being already disposed of. However, by August 1, it is hoped, their new plant will be completed. The work on it is progressing nicely, and as the capacity will be 4,500 barrels per day, in addition to their present capacity of 1,500 barrels per day, they will then be in a position to handle their business with greater dispatch. At present they dispose of all their product, either in Chicago or the immediate vicinity, but expect to branch out when the new plant is in operation. Prices are not what they should be, and not much hope of their being increased in the near future. They are going to commence the erection of a new office building, at Buffington, Ind., where their new cement plant is located, which will be constructed entirely of concrete. The plans are already made and the building will present a very attractive appearance and will demonstrate what can be done in the way of making concrete buildings.

Wolverine Portland Cement Co., 902 Chamber of Commerce Building, C. H. Woods, general sales agent, have found business fairly good, though the prices are somewhat lower than they should be. The situation in the East is not as good as it might be, and that has been the means of driving some of the Eastern manufacturers West, and had the effect of demoralizing prices. There are quite a number of big jobs in the West, and it is hoped prices will rally before long.

Wisconsin Lime and Cement Co., 605 Chamber of Commerce Building, figure that notwithstanding all the drawbacks of the season this will be a good year if nothing unforeseen happens and no further strike troubles come up.



A GROUP OF HENRY STRUBLE & CO.'S MEN, CHICAGO, ILL.

From Our Own
Correspondents.

GREATER NEW YORK.

NEW YORK, June 29.—The demand caused by the small house building, so much of which has been going on in New York and Brooklyn, has given some life to the trade all during the month. Both common and front brick have been in good demand. Lime has gone along fairly for city work, but the local demand for cement has been very weak.

At the Northampton and Quaker Portland Cement Co., 26 Broadway, they said that things were a little better, although the improvement was not very great. This year's dullness following upon that of last year had made trying times for many cement mills, but the worst seemed to be over now and although no gain in price could yet be noted, still the situation was decidedly better, and the outlook for the fall was more encouraging.

At Fredenburg and Lounsbury's, 289 Fourth Avenue, business in front brick is holding up fairly from all general points within the district. The largest contract of note that the firm has on hand is for the front brick for the Columbia College Dormitory, of which McKim, Mead & White are the architects and M. Reid & Co. are the builders. For this job they are supplying 500,000 Harvard brick.

Note Progress in Use of Terra Cotta.

At the office of the White Brick and Terra Cotta Co., 156 Fifth Avenue, Mr. Siedler, said the spring inquiries had been quite plentiful and showed a healthy tone and a decided progress in the use of terra cotta. All the orders, however, which these inquiries would have called for have not been given out, the building troubles, notably the strike of April, having frightened off many, as he knew from conversations with the parties interested.

Mr. Perry, of the Rockland Rockport Lime Co., says lime has continued to hold up pretty well. Common has advanced 5c per barrel; otherwise last month's quotations still hold. Mr. Perry expects to be at the Detroit convention.

Good Business Conditions Reported.

The Farnam Bros. Lime Co., of Cheshire, Mass., are building a railroad from the main line of the B. & A. to their kilns and are also erecting a number of tenement houses for their help. They will erect a new cooperage plant more conveniently situated to the kilns and they hope to erect very shortly a steel structure covering the entire kiln buildings. The business so far this year is very much in excess of that of last year, which is surprising in view of the general conditions of the building trade. However, the character of the lime and the general amount of energy that is exercised in the management of the business is the explanation of this satisfactory condition of affairs. The company will in the early fall take up the question of burning lime with coal, and are now investigating the various systems installed by the most successful plants in the country.

In Calom Tomkins' office in the Whitehall Building, Mr. Butler said: "Things are running pretty slow generally at present in the building trade lines. A noticeable feature is the low price of Rosendale cement, which has been declining in sympathy with the Portland. Rosendale would seem to have struck bed-rock and it is hard to conceive how it can get any lower. Personally we have no great complaint, as we have a special trade which keeps right along, but generally I think we have before us the immediate prospect of a couple of dull months; but with the saving hope that the close of the season will see some revival of business thus affording a chance to the trade to recoup themselves somewhat for their earlier disappointments."

Mr. T. D. Cone will attend the Lime Manufacturers' Convention in Detroit next month.

Mr. Albertson, of the New York Granite Co., St. James Building, said: "I was much interested in reading of the sensible and prompt settlement made by Mr. Sullivan, of the strike in the Woodbury works at Bethel, as recorded in this month's Rock Products. A less discreet and levelheaded official might readily have sided with the men taking it as a matter of course that because the other men had had trouble with that foreman, therefore, the men below should not work with him. But from personal contact with some of the officials at the top in the National Association, as well as from the general knowledge of their acts, I could see that they are careful, conservative and much more broadminded than the leaders of the local organization. As to general business, it is holding along fairly," said Mr. Albertson, "and we have no complaint to make."

Forced to Stop Taking Orders.

Mr. Flint, of the Newport Granite Co., with New York offices in the St. James Building went back home after a short stay in town during, which he successfully negotiated a contract for several hundred feet of the new wall to enclose Woodlawn Cemetery. He reports a very good business, so much so that for the time they have had to shut down on receiving orders as the works were so full.

Mr. J. E. Dutton, of 42 East Twenty-third Street, said the reports coming in were to the effect that the granite trade generally was in a good condition. The Granite Manufacturers' and Dealers' Association of New York, of which he is Secretary, is continuing to make good progress with its membership list. Those interested are realizing the benefits to be derived and are joining in a way that indicates that all the prominent firms will soon belong to it. At the next general society meeting five more applications from prominent houses are to be acted upon.

The Medina Quarry Co., was represented on the fourteenth of June, in Brooklyn, at the laying of the corner stone of the Second Naval Battalion Armory, in the person of Mr. Lee, the company's resident agent of 39 Cortland Street, New York. All the stone used in the building is from the Medina quarries and is their pink and brown sandstone.

A Lively Brush With Carrie Nation.

In a large up town office building where many granite firms have their offices is a theatrical agency, and the dull monotony of business is continually relieved by the presence of many fluffy and chirpy soubrettes in the elevators. But one day there stepped into the car the redoubtable Carrie Nation, who had been up to the office seeking an engagement for herself and her little hatchet. In the elevator there was the manager of one of the quarry companies; a good husky man, a member of the New York Athletic Club, and well known both in New York and up in the Northeast granite fields as an all-around good fellow, a courteous gentleman, and a jolly, cheerful companion and entertainer. He had in his mouth an unlighted cigarette, which Carrie noticed on entering. She immediately began to sniff and said, "I smell one of those stinking cigarettes," and turning to the gentleman said: "Take that nasty little thing out of your mouth and throw it away at once." He politely declined to do so, when Carrie aimed a blow at his head with a book she was holding in both hands. But there was where his athletic training came into play for he made a neat "duck" and Carrie only banged the side of the car. Again and again she tried it, and always with the same result. The occupants of the car were greatly interested in the scrap and stood to one side, giving both parties full room and fair play. Finally Carrie, exasperated at her continued failures to land on her opponent's knob, dropped the book and made a fierce rush at him with both hands out to grapple him, and here again his athletic skill helped him out, for he "feinted" to one side and when Carrie rushed at him accordingly, he jumped to the other side, and she brought up with a crash against the side of the car, while he dodged out on the landing, all there, and still holding his cigarette, the cause of all the trouble.

Glance at the Stone Industry Abroad.

Mr. O. W. Alston has just returned from the other side after a tour among the granite and face stone trade of England and Scotland. He found business dull, but the prospects were good for better times soon. The use of stone for buildings is very common there, and especially in Aberdeen, Scotland, where not only public buildings and private houses, but even barns and sta-

bles are made of granite. It is a staple industry there and of a hundred men that he met at random while there, he thought there was only one that was not engaged in the stone trade. Every day there may be seen at least a half dozen ships loaded with granite for both home use and export. The cut stone work in England is done mainly by the building contractors, who generally run their own quarry and stone yard. They are very far advanced in sawing granite and every yard down to the very smallest has its stone sawing gang, all of home design. Although they are fully satisfied with their present appliances and are somewhat conservative as to new methods of sawing stone, nevertheless they showed a great deal of interest in improved machinery of that character and while there he installed two of his company's straight cut saw attachments of which Harrison Bros., of Millsborough, England, are the European agents.

The Alston Stave Sawing Machinery Co., 10 East Twenty-third Street, is now building a saw gang for John Hagan & Son, Philadelphia, to be ready October 1. It is the first one ever designed with perfectly automatically adjustable feed, stop and reverse; built entirely of steel and so constructed that several gangs can run from one crank shaft, each being independent, making great economy of space. It is put in under a guarantee to saw six inches per hour of granite, but judging by the work done by other like machines of this company under a like guarantee there is every probability that this limit be well exceeded. Since August the company has installed twenty of its other machines among the stone trade generally.

Mr. R. C. Harrison, of the firm of Harrison Bros., Millsborough, England, manufacturers of the Harrison Chilled Steel Shot arrived on June 25, in the Oceanic accompanied by his wife and son. He expects to spend a few weeks here in pleasure and recreation with some attention to business.

Report Business Good at Fair Prices.

The Hudson River Blue Stone Co., 280 Broadway, said: "We can say that business is good and prices are fair, but the trade generally as far as municipal work is concerned, is carried along on old contracts which have been running over sufficiently to keep us busy. But there is nothing new being given out, and were it not for the hold-over work above referred to things would be very slow in the city contract line. As to general construction work, it has held up well. There is a great deal of blue stone going out for general building purposes, despite the efforts that are always being made to substitute something else. The architects call for North River blue stone, but rather than pay the price for it, substitution is continually made of anything that will pass muster as a blue stone, but still enough of the genuine product goes into use steadily to keep us busy right along."

Mr. Jas. H. Kirtland, of 1123 Broadway, said: "The slate business is holding out fairly, yet, as there is so much small house building going on, which does not make much show individually, but which in the aggregate amounts to a great deal, and which, under the Board of Health rules calling for slate, is keeping things going with us pretty well. But no new work is coming in just now, and especially no large work, the bricklayers' strike in April, having frightened off many large investors."

Concrete Construction Progressing Satisfactorily.

Mr. N. F. Palmer, of 150 Snediker Avenue, Brooklyn, said: "The hollow block and cast-stone press business is getting on very satisfactorily. All that has been said, pictured, and printed on that subject has made the building world understand very thoroughly that there is such an industry. That being universally accepted, and much of the dust and confusion raised by these unfortunate and objectionable patent claims, having in a great measure subsided, the builders and architects are now looking into the question of which is the best machine. This action of those most interested, the builders and architects, will soon get the whole business down to a solid, true basis where loudly-voiced patent claims will not weigh against the merits of the machines, and this is what every one who has the future of the industry at heart will be glad to see. As an example, there are in this city a builder and an architect, who believe that there is a great future for the hollow building block and between them they are giving it practical trials in every way that their combined ingenuity can suggest. At first they were, like every one else, much con-

fused by the apparently conflicting patent claims, but they have satisfied themselves that that is all emptiness, and they have thrown that phase of the business to the winds and consider it no more. They have now got down to what they think is the machine giving the best results, and with this they are building experimental walls of all shapes and styles, and are making different experimental kinds of blocks for different walls, studying the effects and varying the make as their experience suggests. All this is expensive, but these two men are going into all this because they feel that there is a big future to the cast-stone business and they are laying a foundation of practical knowledge for themselves.

Catalogue Full of Interesting Matter.

The Ingersoll-Sergeant Drill Co., 26 Cortlandt Street, New York, have got out their new 72 P catalogue of Air Compressors. It is in portfolio form, on heavy paper with a number of half-tones, illustrating all the the styles of Compressors with brief reference notes to each illustration. There are also descriptive tables covering each one. On page 23 is an illustration of the largest Corliss Air Compressor in the world made by them for the Homestake Mining Co., and installed within a year at the Ellison Shaft, Lead, South Dakota. On page 26 is an illustration of a "Straight Line" electricaly driven air compressor of which forty have been ordered by the St. Louis Transit Co., and a number have already been delivered.

The Pneumatic Tool Department of the Ingersoll-Sergeant Drill Co. has also issued an attractive pamphlet containing a full description and excellent illustrations of the construction of the Heaseler "Axial Valve" hammers. Interesting reference is also made as to the scope of a recent decision of the Supreme Court bearing on patented features of pneumatic hammer handles.

The American Air Compressor Works, 26 Cortlandt Street, is now building a compound two-stage air compressor for Messrs. Guidici Bros. & Co., of Barre, Vt., and also a large duplex belt machine for the New York Continental Jewell Filtration Co., for use in connection with the Charleston and South Carolina Dry Dock. Among other orders recently received by them from the stone trade is one from Ernest Epp, of Reading, Pa. They are also installing a compressor for the Alberene Stone Co., of this city.

Splendid Exhibit at St. Louis Exposition.

The Wood Drill Works, of Paterson, N. J., have recently shipped several of their rock drills to Europe, Australia and South America. The company have installed at Block No. 30-B in the Mines and Metallurgy Building of the St. Louis Exposition, a beautifully nickel-plated drill, along with several other drills and their appliances as they are adopted to different kinds of mining and quarry work. The company has issued a handsome catalogue giving full particulars of their machine, mine and railroad superintendents, as well as contractors and mine supply houses will find a good deal of valuable information in this catalogue.

Fine Illustrations in Kotten's Catalogue.

Mr. H. G. Kotten, 120 Liberty Street, has now ready for distribution his new catalogue of his pneumatic tools and appliances, embracing surfaceing machines, plug drillers, carving tools, air compressors, engines and motors. It has large clean illustrations of each tool with a reference note of its application and uses with the code word for each. The pictures showing men at work with the different tools are very interesting, and so also are the details of carving work, and the photographs of the Metropolitan Building, Madison Avenue and Twenty-third Street, and the new Hall of Records on Chambers Street, both of which were dressed and carved with the "Kotten" pneumatic tools.

Mr. D. P. Carritte of the United States Drying Engineering Co., 66 Beaver Street, has returned to town after a very successful Western trip. He reports the outlook to be very good with more business on hand than ever before. He has shipped two machines to Cuba for drying Bagasse, which is a sugar cane refuse, and which goes right from the dryer to feed the boiler furnaces. Another has been sent to New Zealand for drying sterilized bone, and two locally, one for drying hair and the other for hydrated lime putty. We read some time ago of a vast project for reclaiming the Jersey meadows, and on the lines of this enterprise the company has furnished a machine for drying the meadow deposits for the forming of the residue into briquettes of peat.

The Louisville Drying Machine Co., of Louisville, Ky., which makes dryers for all purposes, has opened an office in New York, at Forty and Forty-second Water Street, which is in charge of Mr. H. W. Shepard. The office is fully established and they are ready for business.

New Home of the Pulsometer Pump.

The Pulsometer Steam Pump Co. are now comfortably settled in their new offices in the Whitehall Building. The assembling shops, machine shop and foundry are now under one roof at Chestnut Street and Atlantic Avenue, Brooklyn. The company are building a couple of Pulsometers with boiler mounted on a truck for municipal work in Cuba and Porto Rico. One pump has a capacity of 200 per minute and the other of 700 per minute. These are duplicate orders of former requisitions made on them from the same localities. The pumps so equipped are particularly adopted to sewer work and anywhere where it is necessary to move the outfit repeatedly.

Mr. H. A. Smythe, Jr., of Madison, Wis., manager of the University Co-operative Co., was in New York during the latter part of June looking into the various sand-like brick systems. He studied them up pretty thoroughly, but yet had time to explore "Little Hungary" with some New York friends. He went down to Atlantic City on Saturday to inspect a plant there and remained over all day Sunday. He enjoyed a dip in the surf, a long sail out on the ocean and a moonlight stroll down the long board walk among the many summer girls, who enliven that famed promenade. From chance remarks dropped by Mr. Smythe it might have been inferred that he would not object to come this way again on similar tours of inspection.

SYRACUSE, NEW YORK.

SYRACUSE, N. Y., June 25.—Contractor F. T. Cutler, of the firm of McDonald & Cutler, of Barre, Vt., which took the contract for moving the Crouse boulder, weighing seventy-five tons from Split Rock to the Crouse lot in Oakwood Cemetery, a distance of nine miles for a consideration of \$4,500, has completed his contract and will clean up a tidy little sum despite the fact that he has been sued for \$1,000.00 in a negligence action. This was brought by a young man thrown from his bicycle in crossing the cables connecting the windlass and stone.

This makes the third boulder to be placed on a grave in this county. Two weighing ten tons each were placed on the graves of Calvin McCarthy and that of Robert Dunlap in the cemetery at Jamesville.

The moving of the Crouse boulder was begun in January when the immense stone was placed on a sled and was drawn by 44 horses. This was continued until the rock reached a point near the city line and the snow began to get scarce. It was then decided to leave it until the snow had entirely passed away and in the meantime the carriage shown in the accompanying photograph was erected and it was upon this, with one horse attached to a windlass for motive power that the journey was completed. Eight weeks have been consumed in moving the boulder from the city line to the cemetery and it is now in place.

No attempt has been made to finish the stone, and it will be left in its native state except on one side where the name "Crouse" will be cut.

Work on the new \$1,000,000 Onondaga County Court House during the past week was practically tied up by a strike of the Building Laborers' Union. Other men have been hired and the masonry work is continuing rapidly. The corner stone will be laid at 2:00 p. m. June 30. There may be a delay, caused by the quarrymen to furnish the necessary Onondaga limestone, which is being used for parts of the building. Kelly Bros. are furnishing the stone and Charles Thomas, in whose yards it is being cut has found it necessary to lay off a number of the men owing to the delay in the arrival of the rough stone.

The interior court is being made of dressed Onondaga limestone and buff brick. There is plenty of brick on hand and men available to lay it, but it cannot be put down because of the shortage of limestone. The stone work of the eastern wall of the court is nearly finished, but has stopped on the top course, and the other three walls cannot be laid until the stone arrives.

The granite courses are nearly finished at the east end and are being pushed along so that they

will not delay matters. In a few days they will be complete all the way around the building. On top of them the structure will be of Indiana limestone, smooth finish, and the stone work and iron work will go up a story a month if nothing occurs to delay it.

Two heavy derricks have been put up in the eastern part of the building to raise the heavy granite and, later, limestone blocks and the steel columns. The columns will all have a fire proof casing.

Specifications are completed for the power house in Cedar Street and the contracts will be let this month, probably after ten days' advertising.

The Commonwealth Roofing Co., 110 Court St., Watertown, N. Y., is announcing its asphalt slag roofs for office and mercantile buildings, apartment houses, manufacturing plants, warehouses, etc., which are laid and guaranteed for ten years. The company also lays Seyssel-Rock asphalt floors for breweries, canning plants, dye houses, milk condensaries, cheese factories and stables. The company has general offices at No. 17 Battery Place, New York City and a slag crushing plant at Franklin Springs, N. Y.

The management of the St. Lawrence Marble quarry has completed the work of uncovering a new quarry opposite the St. Lawrence mill, and two drills are in operation.

The Artificial Paving Co. has been awarded a contract for laying one and a half miles of combination curb pavement in Third and Fourth Streets at Fulton. The bid was \$4,300.00.

The works of the Glens Falls Portland Cement Co., Glens Falls, N. Y., have been re-opened with 400 men at work, after having been idle since December. The plant of the Empire Portland Cement Works at Warner, N. Y., eleven miles from Syracuse, is also in operation again.

The Watertown (N. Y.) Board of Public Works has authorized the president to sign a contract with A. F. Nims, of Philadelphia, N. Y., for paving with a material on which Mr. Nims had not bid and the price of which the board had only an approximate knowledge. Mr. Nims submitted bids on four kinds of paving blocks and added this: "or any other block the city may select \$28.60 to \$30.50. The city selected metropolitan block, which was not included among the four definite bids.

The New York Central and Hudson River Railroad Co., commenced operations June 13, in the Turnbull gravel pit, two miles west of the village of Gouverneur, and is employing a large force of men. A steam shovel with a capacity of sixty cars per day has been set up in the pit. Two trainloads of gravel are being taken out daily, one each for the Carthage and Watertown divisions.

Ground has been broken for the new factory of the Syracuse China Co. The capital stock is \$150,000, with the following directors: E. M. Winnie and W. F. Chitry, of Geneva; John R. Dingle, of Westfield, Pa.; and T. Delos Sweeting, M. Burton Coe, Lamont Stilwell, Frederick L. Web, W. H. Arden and Frank P. Costigan, of Syracuse.

T. Delos Sweeting will be the general manager of the concern and in the manufacture of pottery employment will be given to 400 men.

The club house of the employees of the Onondaga Pottery Co., located in the Pharis Block in the West End is about ready for occupancy. The furniture has not arrived.

The Watertown Sand Brick Co., of Watertown, N. Y., will soon be ready to furnish Jefferson County and vicinity with sandstone brick from their new factory located at Sandfords, and are now showing samples of brick and receiving orders at their offices, No. 6, Factory Street.

John Mead, of Warner, has been named superintendent of the Onondaga Vitrified Brick works at Warner, N. Y.

The Builders' Supply Co., of Watertown, has a contract for supplying concrete blocks for the building of a new school at Felts Mills, N. Y.

Hurd, Sherman & Co., Bastable Block, Syracuse, N. Y., have a contract for building and installing a water works system at Hudson, N. Y. The work calls for 15,000 yards of rock excavation and 67,000 feet of pipe. The amount of the contract is about \$300,000.00.

The Watertown Marble Co., operators of the Davidson Quarry at Gouverneur, N. Y., has leased the Stevens Quarry at Canton, five miles from Gouverneur, for a term of five years. The quarry is in operation, a portion of the marble being sawed at the quarry and then shipped to the finishing shops at Watertown. The marble from this quarry is dark blue and is of an unusually good quality.

SCHENECTADY, NEW YORK.

SCHENECTADY, N. Y., June 17.—There is every probability that this town will soon be benefited by the establishment of a plant for the manufacture of sand-lime brick and concrete products. The location is very favorable for such an industry and it attracted the attention of Mr. Elmer E. Stanton, of New York and Grand Rapids, who is the originator of the Stanton System Concrete and sand-lime brick. He has been for some time looking for a suitable site and after a conference with the representatives of the Delaware & Hudson Railroad, he concluded the matter. The factory will be located as nearly as possible at a point which will give equal facilities of access to the New York Central, the Delaware & Hudson and the Erie Canal. Back in December, Mr. Stanton made a visit here and met several prominent citizens, amongst them being Mr. Arthur C. Lindley, architect and builder, who became interested in the project. Moreover there are several parties who have for many years been engaged in the construction business generally, who are aiding and encouraging the venture both for the advancement of the building interests and for the benefit of the town.

It will certainly be a great advantage to us as it will necessitate the erection of several substantial buildings and will give employment at the start to at least fifty men. The machinery is already on the way and will be installed in temporary buildings where, by these machines, will be made the concrete blocks with which the main buildings will be erected, so that the town will profit by it from the very beginning. Several excellent contracts for large buildings are ready for the company as soon as they are fully under way. The plant will make concrete stone for solid or hollow walls, in block form and will do monolithic and general construction work, besides manufacturing concrete brick for all purposes. Mr. Stanton is a concrete engineer, who is thoroughly familiar with bridge abutment and sub-way work and he is now going to New York with a view of looking after some of the contract work in that line connected with the two new bridges, and while there he will attend to the removal of his large laboratory from Brooklyn to this city, where he will henceforth reside. Mr. Stanton expects the company, which will be known as the American-Concrete Stone and Sand-Lime Brick Co., to be in active operation by the early part of July; and Schenectady is to be congratulated on acquiring this valuable accession to its advancement as a manufacturing centre.

SEE.

PHILADELPHIA, PA.

PHILADELPHIA, PA., June 24.—The recent meeting of the American Association of Portland Cement manufacturers at Atlantic City, N. J., was interesting and profitable both from a technical and commercial point of view and the technical phase is fully tested elsewhere in this issue of ROCK PRODUCTS.

From the members of the association assembled for the quarterly meeting, there is a little idea of trade conditions to be obtained made forcible by interviews with manufacturers in one locality. The industry was well represented at Atlantic City. The men in the meeting are members of companies that make a large proportion of the portland cement manufactured in the United States. While some of the mills reported the entire product sold others are less fortunate. There was, however, no disposition to take a gloomy view of the future of the industry. There is a general complaint of low prices and a dull market, and some manufacturers were frank enough to say openly that they are themselves in a measure to blame for such conditions.

"Low prices are a natural result of excessively high prices," said one big manufacturer. "We should have been a little more conservative in making prices. If we had sold some of the product in the West at lower prices we would be getting more money now." The high prices prevailing for a time attracted much new capital. All the old mills increased their capacity and many new mills were built. With the increased production came a falling off in business from natural causes, and of course there was a slump.

Among many of the manufacturers there was a disposition to reconcile themselves to low prices

for some time to come. The opinion was expressed that the meeting marked a distinct advance for the association and for the industry by the conservative view taken of the question of prices. There was a strong sentiment for accepting present prices and trying to make the most of them by economy in production.

While many of the new concerns are not now formidable factors in the situation, some not being able to secure capital at present prices, wherever a mill has been built the producing capacity has been increased. That mill represents somebody's money. Though the original investor may lose largely, it is possible for the mill to be tested.

The local building situation is without change and no change is anticipated.

The Panama Canal Cement Requirements.

Naturally, the cement manufacturers are turning with interest toward the work of building the Panama Canal, but this is not expected to be a great stimulant for the market. Like the Baltimore fire job, it will call for large quantities of material, but the demand will be spread over a considerable duration of time so that it will have no great effect. Uncle Sam is a pretty hard customer to please, and government contracts except at good prices are not considered especially desirable.

Unreasonable specifications have caused stiff quotations on some of the irrigation work, leading to the agitation for the government's own plants. It is not considered probable that any effort will be made to have the government manufacture the cement to be used in the canal. It is not believed to be practicable to produce cement on the scene of operations with any degree of economy.

Growing Demand for Concrete Construction.

Cement and concrete construction are constantly growing in favor in this city. Brick walls with concrete interior construction is a favorite system for a certain class of buildings, and cement is supplanting wood and steel more than brick. One thing in favor of the concrete is the cheaper insurance rates, though in some cases, it is considered too expensive. Plans were recently made by Bollinger & Perrot, for an immense ice storage warehouse to be of concrete, but this plan was finally rejected because of the expense. The slump in steel prices makes sharp competition even with the present low prices of cement. The same firm will build a large factory for a big machinery manufacturing concern of Camden 60x147 ft., three stories with reinforced concrete interior.

The Crane Ice Cream Co., will build an immense plant at Twenty-third and Manning, 110x120, two stories, of concrete. The advantage of concrete over steel for this work is most decided, since the salt used in working and storing ice cream would corrode the steel, but has no damaging effect on the concrete.

The Cut Stone Situation.

Stone cutters generally report business as quiet. Those who have been fortunate enough to secure contracts are busy. In some instances work has been carried over from last season. Very little new work is being let. However, there is practically no surplus stone in the yards. Stone cutters are very cautious in buying stock, especially since they experienced little difficulties in having their orders filled. There are few big jobs on hand here and most of the new work is small.

Jacoby, Sons & Co., on Market Street, are big operators in interior marble decoration. They use Tennessee marble largely though they take some Vermont stock. Their plant is busy, but they are doing work contracted for some time ago. They report the outlook as most promising for new work.

Hastings & Morrison, on Washington Avenue, brown stone largely. They have a good stock of material on hand and are busy.

Mr. McLaughlin, of Giles & McLaughlin report business as very quiet. However, this plant is in operation with a considerable stock on hand. In the yards of the firm I saw the rather unusual sight of a tandem team of fine heavy draft horses tugging at a wagon carrying a huge stone block.

Kirkpatrick Bros., also of Washington Avenue, are busily at work, have a good stock, though like practically all the stone men, they are not enthusiastic over the trade outlook.

The roofing situation is materially governed by the general business conditions and dullness is generally reported. Very little new work is being contracted for, and roofing men do not expect any great increase in business this season.

Reports Roofing Very Active.

Mr. Harris, of Harris, Bortel & Co., said that while his firm was doing some work, the trade is quiet and he did not expect any great advance. Mr. Bortel, the president of the National Roofing Association is the business man I have found in the roofing trade, in fact, he is so busy he is hard to find. When he was finally seen he stated that he was beginning on a new job and was too busy to say anything except that he had plenty of work and was trying to get more. He expects the approaching meeting of the association to be interesting and profitable.

The Philadelphia District.

Building operations are running largely to residences and smaller business houses, some of the more important contracts recently let below:

James J. Harnett has purchased from Eugene H. Carroll a plot 242.1 $\frac{1}{4}$ by 500 ft., at the northeast corner of Fifty-eighth Street and Girard Avenue, for \$46,000.00. On the Girard Avenue portion of the plot he will break ground for six two-story stores and dwellings, each 16x62 ft.; five two-story buildings, each 15.8 by 58.6 ft., and a three story dwelling, 20 by 54 ft. The total cost will be \$41,000.00.

Henderson & Co., are estimating on the rebuilding of a five story store building, 34.6 by 168.6 ft., for the Eaton estate, at the southeast corner Charles and German Streets, in the burned district in Baltimore.

A. S. Tourison was granted a permit for a three-story stone residence, 52 by 66 ft., and a two-story stone stable, 39 by 36 ft., for H. H. Kingston, corner of St. Martin's lane and Willow Grove Avenue, Chestnut Hill. The cost will be \$26,500.00. Plans are by George F. Pearson, architect.

The Berg Co. is having plans prepared for a two and three-story brick and stone extract house, 75 by 148 ft., at its plant at Schiller and Braband Streets.

Plans have been submitted by Wade & Bell, J. F. Stuckert & Sons, C. E. Schermerhorn and H. L. Reinhold, Jr., architects, for a residence and chapel, to be erected at Broad and Berks Streets for the Monument Cemetery Association. They will replace the buildings demolished to make way for the cutting through of Berks Street, from Broad to Fifteenth Street.

On the north side of Berks Street will be erected a three-story residence for the superintendent and on the south side a chapel, with offices on the first floor. Both buildings will be of brick, with stone trimmings, each to measure 30 ft. square. The cost will be about \$20,000.00. It is expected to begin the work of erection before September 1.

Dunring, Okie & Ziegler, architects, have awarded contracts to John Owens for two three-story stone residences, each 45 by 50 feet, at Upsilon Station, Germantown, and to Smith & Hardican for a lavatory building for the Germantown Hospital, in East Penn Street. The same architects are preparing plans for a frame chapel for the First Presbyterian Church, at Delanco, N. J.

Frederick A. Poth will begin the erection at once of twelve four-story and basement residences on the south side of Powelton Avenue, west of Thirty-fifth Street. They will be of brick, with stone trimmings and peaked tile and copper roofs. The dimensions will each be 19.2 $\frac{1}{2}$ by 75.6 ft. The total cost will be \$120,000.00.

George F. Payne & Co. have submitted the lowest bid for a four-story and basement dining hall and dormitory building, 138 by 103 feet, at the Pennsylvania State College at State College, Pa. Plans are by Paul A. & Seymour Davis, third architects.

Edward Fay has been awarded a contract by Laurena Visscher Boyd, architect, for two pump houses, two offices and a collecting basin at Ardmore for Lower Merion township sewage system.

Cramp & Co., and Lynch Brothers have been awarded contracts for buildings at the Frankfort Arsenal. Cramp & Co., will erect a two-story brick and steel storehouse for small arms, 59.3 by 211.10 $\frac{1}{2}$ ft., to cost \$36,299.00, and Lynch Brothers will build a one-story brick and steel artillery ammunition plant, 58.6 $\frac{1}{2}$ by 222.10 $\frac{1}{2}$ ft., to cost \$23,800.00.

Henderson & Co., are estimating on a two-story addition, 47.5 by 37.6 ft., to the Camden Fire Insurance Company's building in Camden. Arthur Truscott is the architect. The same builders are also estimating on a bridge over the Bethlehem branch of the Reading Railway, near Glenside.

John W. Emery is taking estimates for a three-story and basement, twelve-room public school building, to measure 63.2 by 87.8 ft., in Brunswick Avenue, Trenton, N. J. Plans are by Samuel A. Brouse, of that city.

ROCK PRODUCTS.

THE SOUTHWEST.

MEMPHIS, TENN., June 27.—The users of lime, slate, tiling, cement and granite in Greater Memphis are numerous now, and they want the goods in volume. The local factories in these lines are working on full time for the local demand and that in their shipping territory. The dealers are also quite busy.

The Wright Lime and Cement Co., on Second Street, reports the building demand especially good in Memphis. The permits issued here for the last thirty days constitute another record breaker.

The Miller Paving Co. is completing some contracts for the city out toward the city limits and certain real estate men who are taking on to the plan of improving their sub-divisions before putting them on the market.

IN THE MEMPHIS DISTRICT.

Out in Mississippi, Arkansas, West Tennessee and even territory further to the Southwest that is often designated as the "Memphis District" considerable activity is found now in the rock products manufacturing and jobbing lines.

At Greenville, Miss., the Greenville Manufacturing Co. has just been organized. The stock holders of the concern are J. M. Robertshaw, president of the Citizen's Bank; H. N. Alexander, J. J. Harty, J. F. Barnes, contractors; W. P. Shelton and others. The company is capitalized at \$10,000.00. Some of their machinery has arrived and they have already begun work to supply the contract of J. J. Harty for stone front of the Hamblen and Thomas new furniture building.

Straub Pressed Brick Co., is the name of a newly incorporated company, at Helena, Ark. The capital stock is \$28,000.00. S. Straub is president; W. N. Straub, vice president; and R. M. Rider, secretary and treasurer.

The Arkansas Asphalt Co., of Little Rock, Ark., has sunk two shafts in its property in Pike County, Ark., and when the deposit bored through was stripped, it was estimated that there was enough asphalt in sight to do \$125,000.00 worth of paving. The deposit is ten feet thick and of a very superior grade. This same company has just completed a large street contract on West Markham, Little Rock.

Shreveport, La., one of the growing cities of the Southwest is now expending \$430,000.00 on paving its streets. The contract ground of 107,000 yards or about six miles has been let and another three and one half miles will be let soon. A concern in this State, the Nashville Roofing and Paving Co., of Nashville, Tenn., secured the contract on 57,000 yards and will use Bitulithic paving material, which consists of crushed rock and paving pitch made from the products of gas tar. The Memphis Paving Co., of this city got the contract for 50,000 yards and will use Venezuelan asphalt. The Big Rock Sand and Construction Co., of Little Rock has the contract to furnish the crushed stone used by the Nashville company, and will supply it from Big Rock quarries on the north side of the river from Little Rock. This stone is said to be very superior.

At Marble City, Ark., work is about to commence by a new concern, the Marble City and Mining Co., who have just had a meeting and decided to begin work on the opening of the mines on their property at Marble City right away. The company owns very nearly a thousand acres and have one of the finest marble quarries in the State. Some trouble is encountered by the company through lack of railroad facilities.

Arkansas Red Slate Quarries.

A new railroad is to be built in Arkansas from Mena to the immense slate beds in Polk County. With the exception of one quarry in Vermont, Arkansas has the only red slate quarry yet discovered in the United States.

The building of the new State capitol at Little Rock, has brought into prominence and assisted in the development of one of the large industries in Independence County, Ark. The Pfeiffer Stone Co., of Batesville, Ark., who will furnish the stone to be used in the construction of the building has installed at its quarries in North Batesville one of the finest plants in the country. The stone is sometimes called St. Clair limestone. The machinery placed is of late pattern propelled by steam and electricity. A planer will be installed in a short time. It is believed that Batesville marble will become one of the best known building stones in the country.

At Mena, Ark., the Keystone Slate Co. has been organized. The capital stock is \$500,000.00 of which \$40,000.00 has been subscribed. The company proposes to operate slate and stone quarries. The

following officers have been elected: J. W. Soady, president; J. G. Paty, vice president; J. G. Jones, secretary and treasurer.

Dorrington & Johnson, one of the parties, Mr. J. B. Johnson, lately of Denver, Colo., have purchased land near Humboldt, Kans., on which it is contemplated to erect large cement works soon. The property is known as the Gadari farm and is situated two and a half miles from the town. It consists of 300 acres of oil lands.

At Columbia, Mo., the Columbia Cement Construction Co., is a new and promising entre. The company is composed of Berkley Estes, secretary and treasurer; W. E. B. Pierce, general manager; and Henry Bergman, superintendent of works. The company has secured from the American Hydraulic Stone Co., of Denver, the patent right to manufacture cement blocks in a certain territory. The hollow cement blocks are made of gravel and cement, of about the same proportions as are used in granitoid walks. The moulding box is filled with cement mixture and put under a pressure of 25,000 pounds for several hours. The blocks are then thoroughly sprayed with water. Different colors and grades are manufactured.

The Southwestern Slate Co., of Mena, Ark., that is building a new road and making improvement about its slate properties has about \$75,000.00 worth of buildings and machinery on the grounds. The company has been reorganized within the last few days. The new officers are M. B. Van Slyke, a banker of Madison, Wis., president; R. M. Quigley, president of the Bank of Mena, Ark., treasurer; A. Danville, secretary and manager.

At Benton, Ark., the Benton Brick Manufacturing Co., situated along the Hot Springs and Western Railway is a thriving industry. The concern has a capacity of 8,000 building brick and 2,000 dry pressed front brick a day. They expect to manufacture fire brick later this summer. They use two round up draft kilns with a capacity of 50,000 brick each for burning. The company sells not only in Benton, but other cities of Arkansas. W. H. Bennett is president and general manager of the company while his son Frank H. Bennett is secretary and treasurer.

At Forrest City, Ark., the Chocktaw Brick and Tile Co. has been incorporated with a capital stock of \$10,000.00 all of which has been subscribed. The incorporators are: Geo. B. Pettus, president; Eugene Williams, secretary and treasurer; J. H. Turley, S. H. Mann, N. B. Nelson, E. A. Rolfe and Otto B. Rollwage, directors.

Manager Shannon, of the Tishomingo granite quarries at Tishomingo, Indian Territory, is receiving a great many inquiries these days with reference to furnishing stone for some public buildings in Missouri, Nebraska and Arkansas and monumental purposes which he attributes in part to the good work of their exhibit at the St. Louis World's Fair.

Large Quantity of Texas Granite.

Big trains of granite are reported to be moving these days from West Texas to Galveston, with some of the heaviest shipments ever recorded in Texas. This superlative heavy tonnage of eight trains has moved from Granite Mountain to Galveston. The Southern Pacific and Central placed a large amount of rolling stock at the disposal of the shippers. The loads will average twenty five tons to the car and the distance 300 miles. It takes five or six days for the train to make the trip. The jetties and sea walls take part of the product and one authority says its removal makes about as conspicuous a place on Granite Mountain as a mosquito bite would on a elephant."

This mountain is located on the Austin and Northwestern division of the Houston and Texas Central railroad, and the quarries are among the largest in the State of Texas.

The Missouri Valley Stone Co., of Kansas City, has been incorporated with a capital stock of \$3,200, all paid, by David N. Hyre, Daniel R. Moody, Wm. J. Blanton and others.

At Sherman, Texas, in the noted equity case of Samuel T. Carnes vs. the Central Asphalt Reining Co., tried in the Federal Court a few days ago, Judge Bryant has rendered a decision, giving the plaintiff judgment for \$147,600.00, but grants a stay of execution until July 1, at which time all claims must be settled or foreclosure is authorized on the extensive property in and about Port Arthur.

William Steele & Sons and Charles Gilpin are estimating on a warehouse, 200 ft. by 87.9 ft., at the northwest corner of Lombard and Light Streets for the Safe Deposit Co., Philadelphia, Pa.

Cramp & Co., are estimating on a four-story warehouse, 40 by 40 ft., for the Misses Gegan, at 6 and 8 West Baltimore Street, Baltimore, Md.

EASTERN TENNESSEE.

KNOXVILLE, TENN., June 25.—The trade in rock products lines is holding up splendidly this summer, in fact the torrid days are just the best for some character of demand. The best known firms both here and at Chattanooga are full of business and those who push their interests systematically are about full up to their capacity with work and orders. There has been quite a deal of railroad construction and bridge work on the AK. and N. Tennessee Central and other railway lines in this portion of the State. Ballasting, tunnelling and bridge work, much of the same calling for cement and rock concretes.

The building trades in Chattanooga and Knoxville have been consuming some product to say nothing of the big fair at St. Louis and various United States government works calling for marble, lime, cement, slate, and monumental marble or granite.

This article found over in this part of the State has always had good prestige. A visitor to the tall Washington Monument in Washington City can make some comparisons of the granite and marble in that monument and see how that from East Tennessee compares with the other. It was the pleasure of Rock Products' man to see some of those marking stones the last few days and to have them interpreted by people from here nothing is lacking to make convincing.

Exporting Quantities of Marble.

ROCK PRODUCTS' representative visiting the plant in Knoxville, recently, of the Tennessee Producers' Marble Co. For years having had a large place here and within the last few months an addition, 70x60 feet has been completed. Some heavy cutting machinery has been installed. A drafting room thirty feet square has also been provided. Mr. Chas. Lawhon, superintendent of the building department, said that they were quite busy with work now and thought the 1904 aggregate would be the best they had yet had. Just now they are exporting some pretty marble stuff to Australia, China and Japan. Their special marbles are McMullen Gray, Bond Pink, Great Bend, Hawkins County. Right recently they have been furnishing marbles for a handsome laboratory being erected by the University of Pennsylvania also for two exterior jobs in Pittsburg. In the far West a notable order was toward the Tevice monument at San Francisco.

The Knoxville Lime Co., of this city, is quite busy supplying material for some of the local house building work going on in Knoxville and suburbs.

Chandler & Co. report business quite good in drain tile here now. The municipal people and citizens taking occasion of the good summer weather to do their drain work and make improvements to the city's domain especially out towards the suburbs.

Over at Chattanooga, Tenn., your representative called on Montague & Co. These people are getting out a great deal of tile and fancy brick work. They own clay beds close to Chattanooga and in Georgia, and their plant in the Northern portion of Chattanooga right near the Tennessee River covers several acres. They are just now doing a contract down in Birmingham that aggregates about \$15,240.00 for the single contract, in sewer pipe work.

J. M. Burton, of Louisville, Ky., the owner of some marble lands in Northern Carolina has been through here going over to investigate his properties with a view to developing the same.

The Dickson Brick and Manufacturing Co., of Dickson, Tenn., has been incorporated with a capital stock of \$5,000.00 by Will Lovell, G. W. Wynns, J. O. Mahon, V. B. Miller and C. M. Lovell.

The Tennessee Marble Co., is making some improvements on its quarries at Concord, Tenn.

At Columbus, Ga., the Columbus Brick Co., has been incorporated at \$10,000.00 by George O. Berry, A. H. Shepherd, H. M. Howard and J. H. Bickstaff.

The Standard Brick Co., of Lincoln, Ga., is another North Georgia concern just chartered at \$10,000.00 by J. H. Alexander, I. L. Dunwood and O. H. Cabaniss.

In the recent Chattanooga Fair the rock product firms were well represented in the displays and their exhibits were much complimented by visitors. The Chickamauga Cement Co. had a full line of cements in its allotted space, including Chickamauga cement, Natural Rock cement and a specimen of Palmer cinder concrete.

Montague & Co., of Chattanooga had a display of fire brick, sewer pipe and a general line.

Mr. Peter Zechini, manager of the Italian Blue Gem Coal Co., at Jellico has been making some experiments in the Jellico district, which lies just a few miles above here, in the manufacture of lime. Mr. Zechini thinks a very superior quality of lime both for building and fertilizers can be found in the Jellico district and that the supply of limestone is inexhaustible.

The W. H. Leonard Stone Co., at Silvia, Tenn., has lost its plant by fire. The damage was about \$1,000.00 with no insurance.

Large Lime Kiln for Nashville.

One of the largest lime kilns Nashville has ever had has just been erected in that city on the Lebanon road near Mt. Olivet Cemetery by Wm. E. Jordan, manager of the Thos. Nolan estate. The capacity is about 1,000 bushels per day. The old Nolan kilns have been known in Nashville for about twenty-five years. The greater part of the lime for the leading buildings of the city has been supplied from these kilns. They are situated near the city and apparently have an inexhaustible supply of blue limestone. The quarry covers forty acres of rock. The new kiln built about this property is thirty-two feet in height, and has a capacity far in excess of the usual plant. It has a good firing system, and the product is reputed to have much strength.

G. N. Johnson, of Morristown, Tenn., East Tennessee representative of the Winget Concrete Machine Co., of Columbus, Ohio, has been making some examinations at Knoxville and thinks it quite likely that his firm will locate a plant there.

CHICAGO, ILLINOIS.

CHICAGO, June 27.—The summer season is here and all building operations are progressing on a grand scale without let or hindrance from any further bad weather. Not for years has there been more activity displayed in building than there is at the present time, and building materials have been rushed forward at a great rate, and yet the general inquiry among material men engaged in the supply of materials for imposing structure, is halted at almost every turn by the reply that "there is but little doing," "business is slow, or very quiet," as the case may seem to be, and items, of any real possible value to the reader, are not picked up in chunks. The business men of the best judgment seem to hesitate in their opinions as to the real status of the business situation, and stone, sand, brick, and lime dealers all say something which seems to be half discouraging. With great crops promised at this time and the whole West seemingly in a prosperous state, men who have been through a dozen or more presidential campaigns, find it easier to be pessimistic than the contrary. The fact is, however, that, take it all around, business is good for the season, and full of encouragement. The material tradesmen are all doing fairly well. The trouble is that a good many business men would rather sulk than smile.

The Great Sewer Deal.

The Ninety-fifth Street sewer, the largest piece of sewer construction which has been built by special assessment in Chicago during the past fifteen years, has been the cause of considerable argument. When the idea of building this sewer of cement or concrete was first discussed, the president of the bricklayers' union, George P. Gubbins, is alleged to have sent an ultimatum to the Board of Local Improvements, to "build it of brick or don't build it at all."

President Lynch, of the Board of Local Improvements and Mayor Harrison, took a firm stand, however, and the matter has been the subject of much discussion in local papers. The council decided a few days ago to construct the sewer of cement and there is no doubt that this will be done. The sewer in question is intended to drain all the territory south of Eighty-seventh Street to the city limits, including Grand Crossing, South Chicago, Dauphin Park and South Englewood. It will be ten miles in length and will cost \$745,000.00. The sewer will be ten feet in diameter at its mouth. Mr. Gubbins was given an opportunity to appear before the committee of the council and state his case, but did not do so.

There is no doubt but that a sewer constructed of concrete is as good as one constructed of brick if not much better and the report of Commissioners Erickson and Schilling, drawn up after months of inquiry, is to the effect that the sewer can be built of that size in that location at a much

lower price than one with brick would cost. It is possible Mr. Gubbins may try to prevent the construction of concrete by taking out an injunction restraining the city from building it, as he is said to have threatened to do, but the more likely thing is that he will decide to allow matters to take the course they have without making any further trouble.

The Chicago Gravel Co., Fisher Building, with Mr. Renwick business manager, has little to say. They are operating their gravel beds to their full capacity, and what they lack in other directions is fully made up by the large amount of gravel they are furnishing to the railroads for ballasting purposes. Other firms in the gravel business report a fairly good business, but say they could do more if orders were more plentiful.

The sand men, who handle the bulk of all the sand used in Chicago, have their scows at work almost unceasingly along the lake shore pumping up sand from the bottom of the lake. Sand is in demand all over the city wherever there is any building going on, and for many other purposes and yet we hear that there is "very little doing." The sand dunes in Indiana, along the lake shore, are shifted to the cars and thousands of carloads are dumped here for immediate use. As things look the sand men (including sand-baggers) seem to be prospering at this time, yet they don't like to admit it. Why it is so, your correspondent cannot say.

Flourishing Business in Sand-Lime Brick.

Turning to the Sand-Lime Brick Co., they are not complaining. They have orders in hand which seems to be an indication that their business is flourishing, and that the sand-lime plants established throughout the country, and a number soon to go into operation are in great glee over their respective prospects. I enclose you herewith a photo of a new sand-lime brick plant recently established at Antioch, Cal. The material entering into the construction of the building is galvanized corrugated iron. The main building is 40x40 ft., with a single-story addition 60x16 ft. This is the first plant of this kind in California; others will soon follow. The plant belongs to the Golden Gate Brick Co., and is now turning out a fine grade of sand-lime brick. At the present time the plant is turning out from 18,000 to 20,000 first-class merchantable brick per day. The engine room contains a 125 h. p. high pressure boiler and a 75 h. p. Brownell engine. The entire plant is run by nine men. The company has opened an office in the Rialto Building, San Francisco.

Brick Industry in Prosperous Condition.

Our brick yards here are all busy—certainly a good indication. All the yards of the Illinois Brick Co. are at work. Brick is steady at \$7.00 per 1,000 to dealers, and \$6.00 per 1,000 on track.

Directors of the Illinois Brick Co., it is said, will meet this month and declare a dividend of 6 per cent. on the stock. Since the beginning of the year the company has sold its surplus stock and is now reported to be in a position to pay the deferred dividend.

The Building Stone Operators.

Wm. McMillan & Son, dealers in buff and blue Bedford stone, 315 Chamber of Commerce Building, report a fairly good business. They own some fine quarry property at Bedford.

The stone companies while far from idle report business on the whole quiet, "nothing new," said M. B. Madden, of the Western Stone Co., and all the other companies join in the chorus.

The Pavement Proposition.

The kind of pavement recommended for this city are brick pavement where the traffic is not too heavy, granite block for places where traffic is heavy and macadam for streets and roads in outlying districts. Chicago is not greatly pleased with its asphalt pavements, and as for brick pavements here they have all been failures. Both attributed to poor work and poor material.

The lime industry is without any new features so far this month. The kilns are all in operation and large quantities of lime are daily called for. The Stearns Lime and Stone Co. report the market steady at 65 cents. Other firms in the business make the same report.

The Harrington & King Perforating Co., 226 North Union Street, are doing considerable work in screens for crushed stone in railroad work and ballast, they are also having considerable trade among the cement mills that do screening and grading of crushed mineral products. While labor troubles have caused considerable dullness, they consider prospects very good for the fall trade.

The American Sand-Lime Brick Co., Suite 1306 Great Northern Building, closed a contract for a large sand-lime brick plant for Coney Island, N. Y., recently.

The German-American Portland Cement Works, suite 1511 Marquette Building, report the situation improved although prices are low.

The N. A. Williams Co., 1306 Chamber of Commerce Building, handling sewer pipe, cement, flue linings, etc., report the situation improved somewhat.

The Wheeler Corrugated Co., 47 Lake Street, report business as having slightly increased over last month and they are looking for better times.

The Aetna Powder Co., 1718 Tribune Building, report business as having shown a decided increase during the past three weeks, judging from their shipments.

The Jenkins & Reynolds Co., 1210 Chamber of Commerce Building, have been working on several large contracts and report a large number of inquiries for large work which would indicate a greater tendency in cement business.

The Wisconsin Lime and Cement Co., 605 Chamber of Commerce, are well satisfied with their business and look for an increase in same later on.

W. McMillan & Son, suite 315 Chamber of Commerce Building, are erecting a new plant at Bloomington, Ind., to handle Bedford stone for building purposes. It will be equipped with the latest machinery including saws, planers, lathes and travelers. They will start with six gangs of saws, but will install sufficient power for a substantial increase. This plant will be second to none in size and equipment.

The Austin Manufacturing Co., Manhattan Building, have been furnishing several railroads gyratory crusher plants equipped on flat cars including elevators, revolving screens and engine and boiler. Such a plant can be rushed down into the quarry and they are proving a big time saver. Among others, they have sold and equipped a plant for the Grand Trunk railroad for use at Woodstock, Ont., and another for the Michigan Central railroad. This method is also proving quite favorable along the drainage canal. The company has installed a complete line of gyratory crushers with screens on exhibit at the World's Fair, at St. Louis, Mo., in the Northwest section of the Palace of Mines and Metallurgy. The huge shafts used for the gyratory crushers are mistaken by country visitors for large sized cannons.

MINNEAPOLIS, MINN.

MINNEAPOLIS, MINN., June 30.—The general business in the building lines at this time is about of the same proportions as for the same period of last year, except that there are now no large buildings in contemplation for erection in the fall and winter, save only the office building and auditorium for the Northwestern National Life Insurance Co. This building is to be erected at the corner of Eleventh Street and Nicollet Avenue, in Minneapolis, and the excavation for the work is now under way. It will be a handsome building of pressed brick and terra cotta exterior. In St. Paul the large jobbing warehouse for Farwell, Ozmun, Kirk & Co., is to be erected this fall at Second and Jackson Streets. It will include office and warehouse space for their wholesale hardware business. It is understood that both of these buildings will be fireproof throughout.

The cement situation is very much the same as a month ago only a little more so. The product has been large and the demand has been much less than at the same time last year. Lake freights have been lower this season since the settlement of the lake strike, so that Portland cement is sold in carlots cheaper to-day than two months ago. This has a tendency to crowd down hydraulic cements so they also are low, and all the dealers in the Twin Cities have ample stock on hand for immediate delivery of orders for carlots or less.

Concrete Building Blocks Are Booming.

The hollow cement building block business is still on the active boom, and many warehouses, factories, mills and some residences are being constructed in which these blocks are being used with good results. It is understood that the Twin City Rapid Transit Co., which operates all the street cars of Minneapolis, St. Paul and Stillwater, will erect their large new shops and car barns on Snelling Avenue and University in St. Paul, of these cement blocks. If this report proves to be a fact, this job will be one of the largest buildings in the Northwest, yet to be

ROCK PRODUCTS.

erected, of the new building product. The building will be forty feet high and will occupy a ground space of 250x280 ft. in size. The test seems to be coming with these goods as to the proper process of manufacture, whether they shall be made wet or dry. The war is on between the partisans of the two methods. The Wets seem to have the best of the argument so far, as many buildings erected in South Dakota and elsewhere have been completely soaked through in heavy rains. By the wet process the block will absorb no water after seven days, and they are much denser than stone or even some granites. But the cement block has apparently come to stay, and it will find its way into more and more use. As a new thing it will have to be tried out, and there will be additional information as to the best manner of handling it developing from time to time. There is no room for doubt as to its practicability or as to its real durability, for the history of the ancient builders of Rome with their work still standing as firm as anything could be made, shows conclusively that a cement product can be made as durable as any construction material we know.

Brick Situation Improving.

The brick situation is somewhat better this month. Good common brick, kiln run and hard burned, are quoted in the Twin Cities, Chaska, Mankato, Menomonie and Princeton at \$6.00 per thousand. Selected and repressed are higher.

The Menomonie Hydraulic-Press Brick Co., has sold 500,000 of their red pressed brick to be used in the magnificent hotel and passenger station building to be built at Winnipeg, Man., by the Canadian Pacific Railroad. This building will be one of the best in the West, being fireproof throughout and equipped with the best materials in every way. The cost when completed will exceed \$1,000,000.00. The Menomonie Hydraulic Co. also has an order for St. Louis pressed face brick for the new Union bank building in Winnipeg. The building being done in Winnipeg is a credit to that thriving city, in that it is more than usually of a high grade and of a permanent construction character.

Dr. M. D. Wilcox is having a residence erected in Minneapolis at Thirty-fourth Street and Calhoun Boulevard, which is of a construction new to this section. It will be built entirely of hollow tile blocks, with steel beams and cement work, fireproof, and with red tile roof. The tile and fireproofing is from the plant of C. J. Swanson in Northeast Minneapolis.

Wm. M. Sargent, of the Wisconsin Red Pressed Brick Co., reports all orders being filled, both their celebrated sand mould brick and their sewer brick orders, in good shape.

George H. Lawes & Co., of the Gilfillan block, St. Paul, have recently accepted the agency for several new articles in the line of building materials.

D. L. Bell, the lime and cement dealer of St. Paul, has his new building on Minnesota Street, nearly completed.

The Stone Contractors Are Busy.

Lauer Bros., cut stone contractors, of St. Paul, have the roof nearly on for the new armory building of that city.

The Breen Stone Co. are running full time at their quarry at Kasota, Minn. The slight labor trouble in the spring did not last long.

Jones & Hartley, the Minneapolis cut stone contractors have just completed the finest marble front building in the Northwest for the new building of the Northwestern National Bank, on First Avenue South, Minneapolis. It is of Georgia marble. The inside marble and tile work was done by the Northwestern Mantel Co., of Minneapolis.

The Chalker Stone Co., of Minneapolis, reports business fair and their yards are running light with a few small orders on the books.

F. J. Cook, of the Cook Stone Co., Minneapolis, is a candidate for member of the board of county commissioners of Hennepin County.

William V. Grubbs, general sales agent for the Portage Entry Sand Stone Co., with headquarters at Duluth, called upon the trade in the Twin Cities a few days ago.

The Hastings Cut Stone Co., of Minneapolis, have a few small orders on hand at the present time.

Fowler & Pay, of Mankato, who opened an office in the lumber Exchange, Minneapolis, last spring, report business much better than they expected that it would be.

John Wunder, of the Blue Limestone Co., of Minneapolis, reports business fair, with a good sale for their crushed rock.

The M. J. Sullivan Monumental Co., of Minneapolis, are erecting a large mausoleum at Winona, Minnesota.

The Kettle River Quarries Co., of Minneapolis, are shipping a large amount of their celebrated stone to all parts of the Northwest. They have developed a good business for their stone for use for city curbing and gutter work, and wherever a city in this section considers paving it is a certainty that the merits of Kettle River stone will be considered.

The paving work being done in a number of cities in the Northwest is making a demand for crushed stone for a concrete base. It is claimed that even the less durable pavings such as wood blocks will wear a very much longer period if they are set upon a concrete base, and much more attention is being paid to the base work. The street railway companies are setting their ties and rails in concrete base, which is found to give the rails a much better foundation. This is but one of the many uses to which concrete work is being put.

The sand-lime brick process is being utilized at a number of places in the Northwest. The brick produced present a very attractive appearance. Sand and cement brick are also gaining a position. These brick will sustain almost any pressure which may be put on them after they have been allowed to harden a proper length of time, and the manufacturers make the assertion that their bricks improve in hardness for nine years. The possibilities for coloring are great and some very pretty combinations are available.

The Schroeder Brick Manufacturing Co., of Shakopee, Minn., recently installed the pallet system and has started its first kiln under the new system.

The Cement Brick Manufacturing Co., at Fond du Lac, Wis., which has had orders in for some months for a machine, has finally cancelled the order and placed it elsewhere where a prompt delivery is promised. The machine will have a daily capacity of 20,000 brick and will mold cement and sand-brick, or cement and limestone brick.

ST. LOUIS—The World's Fair City.

(Continued from Page 9.)

The machine company is about four years old. It is an outcrop of the cement company, which is about twelve years old and runs five of its own mills, upon what is known as the Cowham system of Portland cement manufacture. The moulding machine shown by the Cement Machinery Co. has a very simple lever motion for applying the pressure. A new machine has just been put on the market for pressing balusters, balls and bases. This machine is said to be the only one of its kind made.

Reports From the Trade.

The Barrett Manufacturing Co., makes "Black Diamond" prepared roofing. Business has been very good until the latter part of June, when things became quiet. Comparatively very little building is going on now and not much is expected until the Fair is over.

The Gilsomite Construction Co. has nothing of especial interest to report at present. The World's Fair has used up most of the road building energy of this territory and now things are taking a rest until the city finds what its needs are and settles down to its normal course of improvement.

Blackmer & Post Pipe Co., business is reported as "fair," but is letting up somewhat, probably on account of the impending presidential election. Prospects are very bright. There is plenty of work ahead as soon as the convention is over. The company, which specializes and only makes sewer pipe and wall coping and a comparatively small quantity of glazed drain tile, is running with a full force all the time.

Winkle Terra Cotta Co., business here has been rather dull. The principal jobs, the past month have been a school building at Sioux City, Iowa, the Mayo building, Fort Smith, Ark.; the Waterloo, Iowa, Commercial Bank, a six-story building, and a Presbyterian Church at Cedar Rapids, Iowa.

Parker-Russell, business here is excellent, in gas retorts, fire brick, and pieces for coke oven works, etc. The demand is greater than it has been any time for five years past.

Missouri Fire Brick Co., here too, trade is good in all kinds of furnace work, gas benches, gas furnaces and construction work of that character. The products of the company are entirely confined to gas house and furnace work. The company puts up all work itself. The amount of con-

struction work in hand is much greater now than at the same time last year. The only worry is, not to get the work, but how to get it done with the usual promptness.

E. E. Squire & Co., these gentlemen, who are agents for brick and owners of sand deposits, state that business the past month was just a little better than normal. As to the general sand business it has, up to the present, been rather better than an average. This is the usual dull season when foundries shut down for repairs. The enquiries and orders for the fall and winter are very encouraging.

E. E. Squire & Co., are promoters of the new sand-lime brick company, known as the Granite Press Brick Co., St. Louis. Frank D. McAvoy, the "Big Fellow," of Philadelphia, will be at the head of the management.

McNeil Pressed Brick Co., this company has removed its office from 1307 in the Chemical Building, to a much larger suite on the third floor, Nos. 315, 316, 317. The company's works are at Newbern, Ill., where a very high grade of dry pressed red front brick is made. There is not much doing at present in St. Louis, and there are fears in some quarters of impending labor troubles. A considerable quantity of the company's brick is selling throughout the State. The Brown Shoe Co.'s plant at Twelfth and Russell was one of the largest of the recent jobs, this is on the point of completion. It is faced with red brick made at Newbern. The backing up brick is from Chicago, for which the McNeil Company is agent. About one million brick were used on this job.

Anthony Ittner Brick Co., the report here is that the building trade is improving and that it seems as if real estate owners have started to build and are putting up rows of dwellings. There is also some school building about to be done. Prices of brick remain unchanged at \$7.25 for merchantable; \$7.50 for ordinary; \$8.00 for strictly hard and red. Pressed face brick (red) is selling at \$18.00 per thousand; buff colors are at various prices from \$16.00 to \$30.00.

St. Louis Portland Cement Co., things are very flourishing here and the voluntary lowering of freight rates by the railroad companies is proving very helpful to the cement trade and improves prospects considerably.

The Acme Cement Plaster Co., trade here is fair, but the company finds building operations in the St. Louis territory less active than they have been and should be. Trade conditions generally are, to a certain extent, waiting upon the outcome of crop results.

Official Communication to Exhibitors.

To Exhibitors in the Clay Industry Display, Block 20, Mines Building, World's Fair:

Alcove No. 7, in the Northeast corner of the Clay Industry Space has been selected as the office of the Clay Industry Exhibit. A writing table, suitably equipped, will be maintained in this alcove for the exclusive use of the exhibitors in the Clay Industry Space. Mail or telegrams addressed to Block 20, Mines Building, World's Fair, for exhibitors in this space will be found at above office. An attendant will make his headquarters at alcove No. 7, as also the undersigned, who will be pleased to aid and assist exhibitors, and to receive and place advertising matter at the exhibits where no attendant is retained. The clay journals and other technical literature will be found at alcove No. 7 which will be general headquarters for exhibitors in the Clay Industry Space.

As the incompleteness of the exhibits on opening day is rapidly disappearing, and the Exposition is now in a most attractive and complete condition, it is hoped that every exhibitor will personally call to see the finest exhibit of the Clay Industry that has ever been made at any American or European Exposition, the credit of which is due to each and every exhibitor therein.

Trusting to soon have the pleasure of welcoming you, I remain,

Yours faithfully,

H. A. WHEELER,

Chairman of Committee.

P. S. If any exhibitor has not been provided with an exhibitor's pass, please communicate promptly with H. A. Wheeler, Block 20, Mines Building, World's Fair, St. Louis.

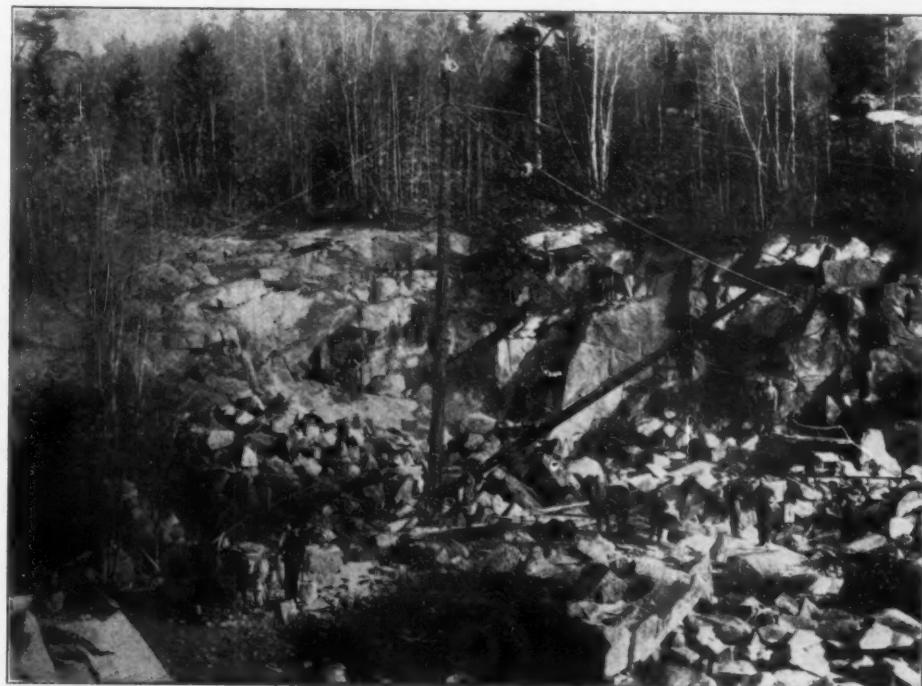
In the marble quarries of Carrara the greatest single blasting operation ever undertaken there has been successfully accomplished, resulting in the loosening of a huge block of marble valued at £12,000.

Granite.

NEW BRUNSWICK.

Across the border in New Brunswick, about midway between St. Stephen's and St. John's on the famous "Shore Line" (Grant Trunk), there is located another Saint. This happens to be St. George, which is a quaint village, well known for hale and hearty granite producers, and for its hospitality to strangers, as well as for the handsome red granite which is wrested from the hills back of the town. It is also noted for being favorably located with reference to many desirable fishing grounds; but if you want to have a real good time fishing, you must be sure to go at the right season of the year, and above all things, don't get fast in the ice.

St. George is quite a granite producer. Six firms are operating here, five of them operating their own quarries, and aside from this there is a quarry property owned by C. W. Young at St. Stephen's which is being operated, although there is no cutting shop connected with this company. Milne, Coutts & Co., proprietors of the Bay of Fundy Red Granite Works, are probably the largest operators here. They own a large amount of quarry property and have a large cutting shed. The cutting sheds are located right in the village on a high bluff close to the falls which formerly furnished them with power. This shed is equipped different to any which we have seen yet. It is a rectangular shed with one end out of the rectangle. The shed is about 500 feet by 40 feet wide by about 30 feet high, and surrounds a yard 50x220 feet. This yard contains a 15-ton traveling crane, built in Scotland, as was nearly all the machinery of this plant. This plant is said to have originally cost about \$75,000.00. Six Jenny Linds are in use, electric power is used, and is all supplied by one motor. The power here, as well as at most of their sheds located along the stream, as they all are with one exception—does not cost them a cent. They were formerly using water power, but with so many small concerns on it the water was wasted so that the pulp mills located here ran short. They therefore bought all the water rights of these



Quarry of Bay of Fundy Red Granite Works, Milne, Coutts, & Co., St. George, N. B.

people, put in motors and supplied them with power free of charge, so that the only cost of power is ordinary repairs.

The granite business here was probably first developed by an artist, Charles Ward, who saw the red stone, and realizing its beauty, succeeding in interesting Peter McCormick, the practical man, and it was taken up and started by them about 1872 or 1873. These men are both dead now.

The company was later incorporated as the Bay of Fundy Red Granite Works by them in New York and New Brunswick. It was mainly New York capital which developed this property. This company failed later and passed through several hands and was finally sold and afterwards purchased by the firm of Milne, Coutts & Co., which consisted of four thrifty workmen, who in the year 1883, started working granite in an old sawmill. Only one of these is living to-day, Mr. A. Milne. The original four were A. G. Milne, A. Milne, W. Coutts and James Ward. Mr. A. Milne, the only one left of the original projectors of the present company, is now a director of the company, treas-

urer and manager. Mr. C. Johnson is secretary, and Mr. J. D. Chipman of St. Stephens, N. B., is president. This was not a stock company in the beginning, but is now. These men started with little or no money and the present property stands as a monument to what can be accomplished by honesty and industry. Considerable other stone than St. George granite is worked here, and this company has secured many medals at various exhibits. The company is also a large dealer in Scotch granites.

Expensive to Quarry.

The bright red granite quarried here is probably as fine as could be found anywhere in the world, but it is a very expensive granite to procure on account of the cost of quarrying, and the size of the blocks is more or less limited. It would be very hard to get a block of more than five tons on short notice, that is in the dark red. Light reds or pinks are readily obtainable in large dimensions. The difficulty in quarrying is not due to defective stock, that is, it is not due to imperfections in the granite, such as burrs or spots off color and streaks, but the rock is so badly shaken and full of open seams that it requires searching through the quarry to get the desired dimensions and leaves large quantities of waste material.

The stone is hauled from two to three miles to the sheds, in some cases by wagons, from other



Cutting Sheds and Yard, Bay of Fundy Red Granite Works, St. George, N. B.



Quarry of Epps, Dodge & Co., St. George, N. B.

locations by boat. Milne & Coutts have several quarries located on the hills which require wagon transportation, and one or two located on the edge of the lake, so that the stone can be run down on a barge within easy reach of the mill.

One of the most promising quarries is located on the edge of the lake about a foot below high water mark. This quarry is operated by Mr. Fred Baldwin. For shipment of rough stock out of St. George, the railroad can usually be reached within a mile and a half.

ROCK PRODUCTS.

After Milne & Coutts had rented and moved into the present property, four of their apprentices, Charles Epps, Joseph Dodds, Henry Meating and M. Coffee, bought property and put in a mill at a location on the railroad, gradually drifting into a good business, and later built a good sized plant close to the one just described. This is another case where energy and good fellowship proved a winner, and in the course of time a good strong business has been built up. The sheds of the above company are in charge of Joseph Dodds and Charles Epps, while the quarry operations are looked after by Mr. Henry Meating.

Tate, Meating & Co., which consists of R. A. Tate and N. & J. Meating, another up-to-date and progressive firm, got under way about 1884, starting with a small plant on the railroad, and later moved to the vicinity of water power, where they purchased a site and built a good plant which is running along smoothly to-day, and doing good business. We regret that time will not permit our making a call on this firm.

Just below the Epps-Dodd sheds the firm of Baldwin & O'Brien are operating what was formerly known as the Taylor Bros. plant, which is a plant started by a father and three sons about the same time that Milne & Coutts began operations. All of the Taylor Bros. firm are now dead. S. L. T. Moran, manager of the above property, was not primarily a stone man.

A little farther down and just across the bridge, you will find a young and energetic firm hustling operations. This firm is known as the Utopia Granite Works, with Henry McGratton & Sons, proprietors. This firm has their own quarry of light red stock and can get out almost any dimension desired without much difficulty. It is the dark red stock in this section which seems to be so much shaken. All the quarries of lighter colored stock furnish larger dimensions. This firm is catering to the monumental and building trade and works other granites than their own.

Mr. Henry McGratton has an other business in St. George, and the sons are the practical granite men and run the business.

The firm of Mesne & McDougal bought out what was formerly known as the Victoria Granite Co., which was located on the railroad. This is the only plant operated by steam, and while it is not a large plant, it is well equipped and has the advantage of railroad facilities. All of the other plants are compelled to haul for shipment.

This firm consists of two young men who know the granite business well, and we trust they will follow in the footsteps of their predecessors, which led to success.

If any of the granite men of the States want to take a little run out and see some granite property beyond their borders and meet a lot of fine fellows who are sure to make them feel at home, and do everything in their power for their pleasure, comfort and education, just cut loose and go to St. George, holler for Charlie Johnson and tell him you are lost.

BARRE, VERMONT.

BARRE, VT., June 28.—The gas people who are about to establish a new power plant in Barre are trying to interest the granite manufacturers to run their machinery by gas instead of by steam and electricity. Several mass meetings for that purpose have been held during the past month.

The Annual Outing.

The Barre Granite Manufacturers' Association has extended to the Quincy, Mass., association an invitation to spend several days with them this summer in return for the compliment tendered the Barre association at Quincy last summer. The Quincy association has accepted the invitation, and plans are now being made for the reception of the guests during the last of July.

C. E. Taynor & Co., of New York, have discontinued their Barre office entirely. G. H. Anker has been their local representative for several years and has purchased all of their Barre interests. C. E. Taynor & Co., were at one time heavy quarry owners in Barre, but sold all their interests here sometime ago.

Will Remain With Us a While.

Z. Macchi, the veteran Italian manufacturer, was the center of a sensation a few days ago when he received through the mail a letter from some unknown person warning him that his life was in danger. The letter was placed in the hands of the proper authorities, but the identity of the writer remains unproven. Mr. Macchi thinks it

was the work of an employee discharged by him a short time ago. At any rate old Z. Macchi's genial face is liable to be seen amongst us for a long time to come.

The corner stone of the new granite Catholic Church (St. Mary's Star of the Sea Church) was laid recently with elaborate ceremonies at Newport, Vt. The structure is to be built of Vermont granite and will cost something like \$25,000.00. There is a rapidly growing market in many sections of the country for Vermont granite to be used in the erection of churches. It makes a very artistic job.

Bros. for the friends of the late world famous bicycle rider, the *Boston Globe* says: "The monument to Harry D. Elkes, the Glens Falls racing man, who was killed at Charles River Park, May 30, 1903, was, last Thursday set in place in the Bay State Cemetery, Glens Falls, N. Y. It cost about \$700.00. The monument which is on the plan of a sarcophagus is of the light Barre granite, rock faced and margined with axed washes.

Description of the Elkes' Monument.

It is six feet wide and six feet high. The die is four feet through. On the front of the stone is the name Harry D. Elkes, and beneath it a winged wheel. The name is in six inch raised, round letters while the wheel and wings are raised and stand out emblematic of the profession of the deceased. The inscription on the back is in V-shaped sunken letters. The top line reads: "Champion Cyclist of the World." Below are the dates of his birth and death followed by this legend: "Erected by His Boston and New York Friends." The stone weighs eight tons. It was dedicated June 19.

C. H. More, who recently sold his splendid residence in Montpelier, is to reside in Chicago in the future, although he will still retain his interest in the granite business with which he is connected here.

George Gray, of the firm of Milne, Clarihew & Gray, returned last week from Scotland, where he has been on an extended visit with his family. They came on the steamship, Philadelphia.

The affairs of the Kane Granite company of Montpelier, are still before the public in large quantities. The first meeting of the creditors in which many Barre manufacturers were interested was held last week. Twenty claims were proved and Julia Kane, the bankrupt, claimed that her husband, Patrick Kane, had entire charge of the business and that she did not know very much about the books. The creditors in this case represent about \$30,000.00. Among the commissioners appointed are: D. F. Ryle and T. J. Kellher. At a hearing later before the bankruptcy court, Mr. Kane put in a bill for \$409.50, it being for services at \$4.50 per day as manager of the defunct company. The attorneys for the principal creditor, Mrs. Heath, objected and the continuance of the hearing is now pending.

New Company at Northfield.

Among the incorporation papers recently filed at the office of the Secretary of State is that of the Bethel Granite Co., capitalized at \$5,000.00. The incorporators are: A. E. Denny, E. B. Ellis, Golden Starrett and I. C. Ellis, of Northfield, and Roger Sherman, of Chicago. The company operates in conjunction with the E. B. Ellis Granite Co., of Northfield.

Along with the boom that is so apparent in the building line is a very healthful increase in the call for paving and curbing in Barre granite. The Langfeld Granite Co., under the management of Augustus J. Langfeld was launched here a few months ago, and they are getting a goodly amount of work in supplying paving and curbing. They recently purchased the Parkhurst white quarry and are ready to take contracts for rough work in white Barre granite, not only for paving and curbing, but for building stone as well. Mr. Langfeld came here from Fitchburg, Mass., a year ago when the city of Barre gave him the contract for paving its Main Street. He has been in the business for many years and has a thorough knowledge of the undertaking. The granite produced by this quarry is especially adapted to use in paving, curbing and in building. The company is at present engaged in getting out a considerable quantity of curbing for Albany (N. Y.) contractors.

The newspapers in speaking of the Memorial Day exercises at Hardwick this year, gave much praise to George Bickford, manager of the Woodbury Granite Co., for the eloquent address he gave as orator of the day.

Mr. and Mrs. F. S. Carey, of Zanesville, Ohio, visited the Barre district recently.

Skilled Workmen From all Nations.

That Barre has the benefit of the skill of all nations in exemplified at the shed of the Harrison Granite Co., where on a hurry up order for the cap to a large monument four men are employed. These men represent four nationalities, French, Scotch, Swiss and Italian.

Milne, Clarihew & Gray, Emslie & McLeod, and C. W. McMillan & Son, who all operate from the same power plant were closed down for ten days last month while repairs were made on the boiler.

The Newport Board of Trade has leased their granite shed to the Newport Granite Co., of Albany,



ALEXANDER INNES.

Who now devotes his entire attention to the quarry.

Drew Daniels, of Waterbury shipped a few days ago one of the largest monuments ever sent out of Waterbury. It was a soldier's monument, and is 27 feet high, with a 9 ft. square base. It required two cars for its shipment. Its destination is Whitehall, Ill.

Strike Settled Amicably.

The strike of the polishers and lumpers at Montpelier was settled during the early part of June



MOORE BROS. & BRAULT.

The three partners in the midst of their new granite works on the day they took possession.

by the men agreeing to work under the same bill of prices as that prevailing in Barre. The trouble began May 1. The settlement runs until March 1, 1908. These terms had been offered the strikers several weeks before they finally voted to accept.

In reference to the monument cut by Canton

N. Y., and will build an additional shed as large. This company has bought the Hazel quarry.

A large piece of granite was shipped a few days ago by Leland, Hall & Co., to be used in the construction of the court house at Washington, Ohio. It is about sixteen by fourteen feet and is one foot thick.

Will Operate Upon a Large Scale.

One of the most important transactions that have taken place in the Barre granite world for sometime occurred June 18, when the large granite cutting and polishing plant including the sheds, machinery, business, good will, etc., of Innis & Cruickshank were sold to the firm of Moore Bros. & Brault, the latter taking immediate possession. The firm who are selling out started business in Barre in 1892 and has always been counted as one of the leaders. Mr. Cruickshank died last fall and the responsibility of the entire business fell upon the shoulders of Mr. Innis. The firm sometime ago acquired in connection with their cutting business the ownership of a large and up-to-date light and medium quarry and it is for the purpose of devoting his entire attention to this latter branch that Mr. Innis consented to sell the cutting plant. The firm of Moore Bros. was established two years ago by J. H. and W. A. Moore. Their success during this short period has been quite remarkable and is evidence that they constitute a strong team. Both of them are practical men, having worked at the trade for about fourteen years. They personally supervise the work in their shed and their knowledge of the business enables them to see that things go just right amongst the cutters. Joseph M. Brault, was taken into the firm as a partner at the time of their purchase of the new plant last week. Mr. Brault is one of the best office men in the business. He has been for the past seven years in the employ of Emslie, McLeod & Co., as draughtsman and general office man. The new firm of Moore Bros. & Brault will have all the equipment of the Moore Bros. plant and besides this, by their purchase they acquire two surfacing machines, thirty-five pneumatic tools, two electric motors, an air compressor, a thirty-five ton derrick and two polishing machines. They are thoroughly equipped for all classes of work of all sizes and Mr. Innis recommends his old customers to his successors. They can employ about sixty cutters.

A. A. Cady, of the Eclat Granite Co., recently returned from an extended visit to California.

Reaching into the Middle West.

George Walker & Sons are feeling good over the prospects for the summer and are getting a good deal of work from the Middle West dealers.

George Mutch, of Mutch & Calder, has recovered from his camel ride over the hot sand that leads to the Mystic Shrine. George "rode" at the last meeting of Mount Sinai Temple held at St. Johnsbury.

Canton Bros. have got about as nice a lot of work under their hammer in their shed as is often seen during dull times. They are cutting in addition to several medium size vaults a large mausoleum for the Weston estate to be set up in West Laurel Hill Cemetery, at Philadelphia. It is all ten cut work, has two pillars and two pilasters with carving at all available points. It is surmounted by a hammered dome and is nearly 20 feet square and 21 feet in height.

Polishing Business Reported Dull.

John Martinson says the polishing business has been the dullest this summer that it has been since he has been in business, but John is wise enough to say that he has not the slightest doubt that business will be better soon. Mr. Martinson, besides his cutting business is in company with W. A. Lane in the polishing mill.

Carroll & McNulty are demonstrating this month that hammered work in Barre granite can be made specimen of art. The particular job referred to is to be sent to Portland, Michigan. It is a carved die monument and has a carved column at each of the four corners. The cap is also carved.

Planning Extensive Improvements.

Beck & Beck are planning quite extensive improvements and additions to their machinery equipment this summer. Amongst other things they are to purchase a big polishing machine for inside work and use their present machine outside for polishing big work. This firm is cutting a big thirty ton rock face monument to be sent to Kansas. The Becks think business is best in the far West and South, according to the receipts of orders from those sections.

C. W. McMillan & Son are getting business from

California, Missouri, and Ohio and see no reason for complaint about dull times.

The Smith, Whitcomb & Cook Co., recently shipped a large boom derrick to the Newport Granite Co., Newport, Vt., and another one to the Pike Manufacturing Co., of Pike Station, N. H., for their soft stone plant. They are also building four big derricks for down country parties.



WILLIAM F. FRASER,
Manager of the Granite Construction Co.

James Campbell, of the firm of Mortimer & Campbell has got into trouble. The city council of Barre have chosen him as a liquor license commissioner to fill a vacancy caused by resignation.

William Parry, of the firm of Parry & Jones, is calling on gentlemen of the trade in New York and Pennsylvania.



DOUGLASS BARCLAY,
Son of Mayor Barclay of Barclay Bros., youngest
Barclay in the business.

Adie & Milne are cutting a very nice job in the form of a Sons of Veterans Monument for Syracuse. It consists of two bases, a die and a cap, all plain fine hammered work and surmounted by a statue.

McMinn & Sons are cutting a nice class of work this summer. They have the faculty of making an excellent job out of a simple design. They have some half rock face jobs under the hammer that attract much attention.

Mr. Barton, of the firm of Lazarri & Barton, of Woodlawn, N. Y., was in town a few days ago to inspect a large mausoleum job which the firm is having cut at Robins Bros.

Large Contract in Sight.

Frederick J. H. Krocke, assistant commissioner of agriculture from New York, was in town a few days ago looking over the cutting business in Barre. Mr. Krocke was accompanied by Mr. Patterson and Mr. Copeland, who are also connected with the Tayntor Construction Co. Albert Tayntor was the original head of the firm, but since his death the company has been reorganized. The widow has taken into partnership the above named gentlemen and Mr. Clement Wells. The visitors stated to some of the manufacturers that they are to send about \$30,000.00 worth of mausoleum and monumental work to Barre within a few days.

Littlejohn & Milne have taken within the past few days three big vault jobs and a lot of monumental work. They are getting the bulk of their business this month from New York State, Wisconsin and Minnesota.

Contemplate Building a Shed.

Smith Bros. are getting out a splendid job for Cincinnati. The base is 9 ft. square. It is a carved monument and stands 14 ft. surmounted by a statue, making in all 20 ft. in height. On one side of the plinth is carved the double eagle of the thirty-second degree Mason, and on the other three sides respectively the Knight Templar, Royal Arch, Chapter and Blue Lodge emblems. This firm has up to the present time been located in the E. L. Smith & Co. circular shed, but owing to the extensions being made by the latter, it is necessary for all the tenants to vacate.

Mirror Photography at Barre.

Fred C. Eaton, a prominent photographer of Barre has added a new department to his business that will be of considerable interest to the granite men. This new department is that of mirror photography of monumental designs. The class of work he has done thus far should bring him all the business he cares to handle. This is the first opportunity that Barre men have ever had to get this work done at home.

The Granite Construction Co. still continues to bring building jobs to Barre. The latest ones include the new post office building at Champaign, Ill., and a machine shop for steam engineering at the United States navy yard at Portsmouth, New Hampshire.

Littlejohn & Milne are putting a new Sullivan steam drill at their quarry.

Hopkins & Huntington, who have done business for several years in the E. L. Smith & Co.'s circular sheds are now arranging to move into other quarters. They are getting out in addition to their other work an all hammered sarcophagus for Monticello, Ky.

Wells & Lamson are putting in a new Sullivan steam drill and making other improvements at their quarry.

Preparing to Increase Their Business.

E. L. Smith & Co. are creating considerable of a sensation by the elaborate preparation they are making to increase their cutting business. The firm owns about 500 feet of shed room, a goodly portion of which they have rented for some time to other manufacturers. They have recently given notice to all their tenants to vacate and are to use all the space themselves. They are raising and repairing the buildings and making many improvements, not the least of which is the installation of an air compressor. They have recently received orders for several large mausoleums to be built at once.

Charles S. Howell, of D. J. Howell & Sons, monumental dealers of Easton, Pa., is in town as the guest of Donald Smith, of the firm of E. L. Smith & Co.

Ex-mayor C. W. Melcher, of the firm of Melcher & Hadley, is in St. Louis as Vermont delegate at large to the Democratic National Convention.

The E. B. Ellis Granite Co. has built a large boarding house at the Bethel quarry. It is expected to accommodate one hundred quarrymen.

A Few of the Baltimore Contracts.

Philadelphia contractors are getting their share of the Baltimore rebuilding and among the contracts recently let are the following:

George Matchell will erect for William Webber six two-story dwellings, each 16 by 36 ft., on the west side of Lawndale Street, above Coltman, to cost \$9,500.00.

W. E. Ferguson will erect for K. Hart a two-story dwelling, 16 by 41 ft., on the east side of Eleventh Street, above Duncannon Avenue, to cost \$2,930.00.

ROCK PRODUCTS.

QUINCY, MASS.

QUINCY, MASS., June 23.—Since the completion and shipment of Memorial Day orders, trade in the granite industry here has dropped off to an appreciable extent. Memorial Day work has been on a par with preceding years and the present business lull is noticeable every year after the rush for the completion of spring orders is terminated. There are prospects of a good summer and fall trade, however, and already not a few manufacturers have a good start on summer work.

Annual Outing.

What is just now engaging the attention of the manufacturers is the contemplated summer outing, which will be on a larger scale this year.

On every side one is met with the question, "Are you going to Barre?" for it is in the Vermont granite center that the Quincy association will be entertained this year. A goodly number have signified their intention of making the trip and a gala time is expected.

The Quincy association with friends will leave the North Station, Boston, the latter part of July and at least three days will be allotted to the outing. An efficient committee is taking hold and needless to say the preliminaries will be carefully seen to.

If last year's re-union of the Barre and Quincy associations can be duplicated no more need be asked, but it is hinted that the Vermont granite dealers are to make this year's time such a record breaker that last year's event will be entirely cast in the shade.

If this be so the local manufacturers need to be amply prepared, if they are to drop back into the business routine on their return.

Sale of the Quincy Granite Quarries.

An important occurrence took place this month, which should tend to bring back a deal of trade to this centre. On the morning of June 18, the foreclosure sale of forty-five parcels of quarry property of the Quincy Granite Quarries Co., was completed. The sale was made by order of Judge Colt, of the United States Circuit Court, in the interest of the bond holders. William H. Russell, of New York, representing J. K. Hayward, et al the trustees bid in the property for \$75,000.00, depositing a check of \$5,000.00 with Commissioner Walter B. Farr, as evidence of good faith.

It was in November, 1903, that the granite syndicate went into the hands of a receiver, because the company had defaulted upon the payment of interest upon the bonds. It was several years ago that the scheme of combining the quarry output was started. The company was capitalized for \$1,500,000.00, under the laws of New Jersey. All went well until last November, when the crash came. Since the United States Court became interested in the company and ordered the sale of its property, a thorough reorganization of the company was commenced. This was satisfactorily completed and the scheme of reorganization and the subsequent sale met the approval of more than three-fourths of the bondholders.

The company is now under a more stable financial basis, and once the court approves the sale business will be resumed under favorable conditions.

There were many present at the sale. The property was sold by Walter B. Farr, commissioner. The American Loan and Trust Co., which held most of the bonds was represented by Howard Sargent. The Quincy Granite Quarries Co. was represented by John W. McAnarney, James Thompson and Elsworth E. Morgan. William H. Russell, William B. Winslow and Theophilus King represented the committee on reorganization, bond holders and creditors. Messrs. Russell and Winslow were also representatives of the receivers.

The company did not cease operating the best of their quarries, while the adjustment of affairs was under way. There is now every facility available for their making good in a way that will bring much business to this city.

Many Shipments of Finished Granite.

The shipment of rough and finished granite during May was very large. Just 12,853,832 pounds of the product of the mills were shipped from the various depots as follows:

West Quincy, 5,931,000 pounds; Quincy Adams, 6,409,692 pounds; via the Quarry Railroad, 513,140 pounds.

THE NEW SHARPENING MACHINE.

Successful Development of Important Invention Based Upon Scientific Formula.

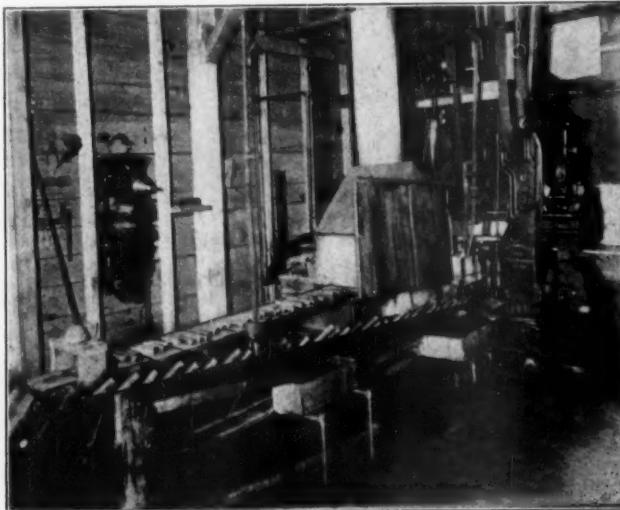
BARRE, Vt., June 25.—Since the adoption of the pneumatic tool no invention has attracted so much attention in the granite trade as the Pirie Tool Sharpening Machine. It has now passed the experimental stage, and for the first time appears before the public in this issue of ROCK PRODUCTS in a description and with an illustration.

The machine has been for a long time on the road, but it has finally been perfected. As to its success, the simple statement that it will save enough to more than pay for itself and its installation in one year, makes it a very important feature of modern granite production.

The fundamental principle upon which the invention is founded is the formula for tempering steel as recommended by Dr. W. A. Otto Wuth, known among steel makers as "the father of applied chemistry in the steel trade." The results of the tempering in this way are undoubtedly the best known to science.

Description and Methods of Operating.

The whole thing is very simple. In the first place the tools are placed upon an endless chain or



The Famous Pirie Tool Sharpening Machine, Barre, Vt.

conveyor, which runs over pulley wheels like a belt. The chain carries the tools through the fire at any speed desired, oil being used as fuel. The flame is regulated as easily as a gas jet, the proper temperature being adjusted by a hand wheel. The tools having passed the furnace they are ready to sharpen and each one is caught by the operator and shaped between the dies of a power hammer, ground upon emery wheels if necessary and then dropped into the tempering bath which is always in waiting on another conveying chain. This latter travels at a given speed until the tool encounters a stream of cold water and passes over the end into a box where it lies ready for use when the tool boy comes to get it.

To operate the machine to its fullest capacity two men are required, one to preside at the anvil and the other to feed and sort tools. The operator's job being the harder, the two men shift every hour. When running for seventy cutters, two men on the machine will do the work of five sharpeners who work the old way.

Fifteen Years on the Road.

It is no secret that it is fifteen years since its invention and ten years since it reached its present form, but the capital necessary for a practical demonstration could not be found until nearly two years ago. Since the progress has been sure and steady. To every problem presenting itself a satisfactory solution has been found until it would seem that the machine should satisfy every reasonable demand. First among these demands is

The Quality of the Work.

In attempting to show that it serves these ends we shall point only to accomplished facts and

shall not draw upon the store of possibilities. The question is "will it do good work?" The answer is, "yes." We know of no process for producing better tools than with this machine in the hands of a skillful and conscientious operator.

It is simply an improvement on the present way of sharpening and still depends upon human skill to produce good work, but the necessary skill can be acquired in one fourth of the time required to learn the old way. It is still necessary to heat a tool, to shape, or sharpen it, and temper as usual.

To take the place of a blacksmith's fire they employ an oil burning forge through which the tools are carried at any speed desired two and a half minutes for the smallest to three minutes and a half for the larger. The degree of heat is also under perfect control and is easily regulated. Thus the tools are heated in a mild, clean fire, which preserves the structure and quality of the steel indefinitely, the worn out tool being as sound and perfect in quality as at any time in its existence. The heated tool receives as many blows from the power hammer as the operator desires to give it, usually about a dozen. The width of a point is wholly at his discretion, but its shape the other way depends upon the shape of dies, and for best results two forms are used, giving a fairly strong point for roughing and a slim one for fine pointing. In place of the blacksmith's file, emery wheels are used. This not only facilitates speed, but in appearance the work approaches perfection when skillfully done. It remains but to temper, and here is where superstition held sway the longest and the apostle of "it can't be done" found his strongest arguments.

Nothing, it was claimed, but human skill could temper a stone cutter's tool, and that the peculiar quality of the blacksmith's hammer blow was absolutely essential. As these illusions were dispelled the above mentioned apostle became the apostle of "it shan't be done." But, thanks to the average intelligence and fair mindedness of men in the granite business, that doctrine found few supporters.

Such scientists as Dr. Wuth were accepted in preference to the opinion of some of the blacksmiths.

Amount of Work.

The question is "how much work will it do?" This also depends upon the operator. The machine can be speeded to reach the limit, which is the point where a tool burns in shaping between the dies, but no operator has been found swift enough to reach that speed

except in case of new tools or badly broken ones. The indications are that one hundred men might be sharpened for without injury to the steel if the operators were fast enough. At the plant of Barclay Bros. the machine has taken care of seventy cutters with an hour to spare every day.

Time Necessary to Learn.

This depends largely on the aptitude of the learner. A stonemason learns more easily than a tool sharpener as he knows a good shaped tool and can begin to learn at once. The sharpener also knows the shape of tools, but has the trouble of forgetting all he knows about the business, as the machine uses a lower heat and no hand hammer or file and the operator holds the tongs in both hands instead of in one. With the aid of a skilled operator a man should do fairly good work at the end of a week at about half speed, in from four to eight weeks he should reach average speed, but might be expected to improve for a period of twice that length.

Time Required to Build Machine.

They can usually be built in from three to four weeks, and it takes about a week to install them. It will weigh about three tons, and it sold f. o. b. at Mountpelier.

Amount of Room Needed.

For the proper accommodation of one of these machines a room 16x22 ft. is convenient with a height of 11 ft. to beams, a chimney and ample light and ventilation with solid foundation for the hammer.

Fuel oil is used, and 100 gallons per week is needed. In central Vermont it costs about \$1.60

per day if bought by the barrel. If bought in tank car it costs about 80 cents per day.

Unquestionable Reliability of Work.

The nature of the work done demands a machine that is as positive and reliable as it is possible to make it. To this end no labor or expense has been spared, and we consider it no small compliment to its merits in this direction to be able to say that in the year that it has been in actual service at Barclay Bros., at no time has it been over two hours behind in its work, and has been run overtime, but one hour.

Sketch of the Inventor's Life.

James Pirie, the inventor was born in Aberdeenshire, Scotland, in January, 1856. He was educated in the common schools of Scotland and America. He came to America in 1871 and went to Ontario, where he assisted an uncle on the latter's farm for one year. He then went to Dix Island, Me., where 800 men were employed in cutting the granite for the New York post office. He followed there followed the humble occupation of turning the grindstone for the cutters to sharpen their tools on. That was as far advanced as machinery was at that time, and after a short period at this arduous labor the intelligent youth conceived the idea that some day he would arrange it so that a steam engine would have to do the work that so wore upon him.

He went to Concord, N. H., in 1872, and became a tool boy on the quarry. Later he became a quarryman and in the spring of 1873, began to learn the trade of a granite cutter. This occupation he has followed ever since in New England and in other parts of the country as well.

The first definite plan that he made regarding the machine was when he saw them making tools with the trip hammer at Hurricane Island, Me., in 1879.

Nine years later he had grasped the principles and started in dead earnest to express them in the shape of a model. With this idea he worked hard to raise capital, exhausting himself in body and pocket and found it necessary at the end of a year to give up the agitation. He made up his mind then that he must build a model of an improved machine.

Before the drawings of this second machine were completed other improvements suggested themselves and not until the fifth one had been designed and the present one produced did he give up a single spare moment from his labors when he felt that the subject had been exhausted and the invention perfected. Ten years ago he saw the machine as complete as it was possible to make it. After this it was a matter of experiment.

Mr. Pirie expresses much gratitude to Ernest Lemmon, a former secretary of Barre Branch Granite Cutters National Union and the present secretary of the Raymond, California, Branch for coming to the rescue at a time when the situation was at its worst and the lack of funds bid fair to make the invention a failure. Mr. Lemmon had faith in the project and he supplied the cash, enabling the inventor to give a practical demonstration by doing the actual work of tool sharpening for several different firms in Montpelier for a period of six months until he could show what it could do.

At this time the enterprise of Barclay came to the aid of the invention. He installed a machine at his plant and found it to be the success he had hoped to find.

As a result of his trial of it, a second one has been built and installed at the plant of the Webb Granite and Construction Co., at Worcester, Mass. Both machines are giving excellent satisfaction and others will undoubtedly be called for soon. The office address of the manufacturers is: Pirie Tool Sharpening Machine Co., Montpelier, Vt.

Captain Fred H. Madgeburg and D. Lloyd Jones, of Milwaukee, Wis., have been authorized by the Shiloh monument commission to designate the kind of granite that shall be used in the base of the monument at Pittsburg Landing. Samples from Barre, Vt., and from Westfield, R. I., are under consideration.

The Hallowell Granite Works, Hallowell, Me., have secured a contract for furnishing the granite for the naval academy at Annapolis which amounts to several \$100,000.00.

Mr. Frank Teich will develop a large granite tract which he has acquired near Llano, Texas. R. H. Downman, of New Orleans, La., has also secured a valuable option in the same neighborhood.

Annual Outing of Granite Men.

The Quincy Granite Manufacturers' Association has accepted the invitation of the Barre men to come here for the annual outing this summer and it is hoped that every mother's son of them will come. Barre's most exalted desire is to give them as good a time as they gave to the Barre boys last year. If they succeed in doing that they can die happy. The visitors will leave Boston on the night of Thursday, July 28, arriving in Barre, Friday, morning. While here they will be entertained in a unique fashion and one that will be quite appropriate to Vermont. What the program is will be learned by the visitors after they get here. Amongst other things they will have an opportunity of working a thorough inspection of the quarry and cutting business as it is carried on in Barre. They will probably return on Sunday night so as to resume work Monday morning. Special cars will be attached to the train for the Quincy party. The Quincy Association will furnish each firm with one transportation to and from Barre.

Wants a Good Partner.

LITHONIA, Ga., June 27.—C. T. Brand, writes: "The granite business is very dull. The different unions absorb all there is in the shape of profits in the business, and there is no encouragement for a party branching out. Our freight rates are very reasonable, but the haul is so long that it amounts to a heavy freight anyhow, and on top of this, the union seem to want the earth and the fullness thereof before any work is done. I have granite for sale in the shape of curb stones, building stone and Belgian blocks, either rough or dressed. I would like to have a good partner or sell out my holdings to a good firm."

Fine Red Granite in the West.

GRANITE, OKLAHOMA, June 20.—J. M. Morris, manager of the Abeline Granite and Finishing Co., writes: "Change our address from Abeline, Kan., to Granite, Okla., as all the business is transacted from this office. We are installing one of the best plants West of Barre, Vt., putting in a 80 h. p. steam engine, traveling crane, four polishing machines, column cutter that will cut and polish a column 20 feet long and three feet in diameter. We will also install a stone crusher as soon as we get the other machinery all under way. We are also putting in a Lambert steam hoist, and 65 feet of derrick. Our shed will be of the latest pattern built after plans of the Milwaukee Monument Co., and when completed we will have a strictly up-to-date plant, and will handle all kinds of monumental and building work. Our quarry is turning out the finest red granite on the market."

Forced to Shut Down.

CLARKSTON, WASH., June 4.—Mr. H. W. Newton, secretary of the Idaho Granite Co., writes, "We are not working our quarries at the present time owing to a lack of the proper transportation facilities. The steamboat which plied on Snake River to our property was lost last fall and until a new one now under construction is put in commission we are forced to lay idle."

On the High Tide of Prosperity.

SALISBURY, N. C., June 14.—Mr. J. T. Wyatt, writes, "The granite business here is better this year than ever before. Orders for street curbing, paving blocks, building stone and large engine beds are coming in from all over the country. Our granite town is growing very fast, several new residences are going up and many thousand dollars are scattered out among the working people every month. I am putting up two derricks and I am having a granite shed built in addition to my other works. The name of our town is Granite Quarry, Rural Free Delivery Route, No. 3, Salisbury, N. C."

Mr. John Goldrup is in charge of the Freeport Granite Quarries of Freeport, Me., which is being operated by R. D. Shannahan, of Portland, Me., getting out a quantity of material to be used in the government fortifications at Great Diamond Island.

The Pownal Granite Co., of New York City, has been incorporated with a capital stock of \$10,000.00, for the purpose of opening and conducting a stone quarry. The incorporators are: A. S. Houghton, Jos. McElroy, Jr., C. Montgomery, all of New York City.

Clay.

New Brick Invention.

WELLS, Delta County, Mich., June 4.—Donald McKinnon, a member of the Michigan Ornamental Brick Co., whose plant is on Little Bay de Nocque, has invented a brick which seems destined to work great changes in the building trade. It consists of a dry press brick, made from the clay found on the Royce property where the plant of the company is located. The brick is exceptionally smooth, solid and compact and it will ring like a piece of crockery when hit.

Steady Demand for Brick.

BIRMINGHAM, ALA., June 3.—Mr. J. R. Copeland, of the Jefferson Brick Co., states, "There will be much building in the near future and especially in the cotton section of the country. An order for 200,000 brick will be filled at once here. Cars have been placed at the yard ready to be loaded. The brick market has been a little quiet, but the cotton section is coming to the front with orders, and there will be a steady demand for brick."

Ready Market for Paving Brick.

JOHNSONBURG, Pa., May 31.—Mr. Henry Hasbrook writes, "I have taken a position as manager of the plant of the Johnsonburg Vitrified Brick Co. This firm is making a paving brick and blocks of as good quality as are made anywhere. Sales are good and the output finds a ready market. We would be glad to have you visit our plant at any time."

Five Kilns Making Fire Brick.

FALLSTON, Pa., June 4.—The Standard Fire Clay Co. say, we are just completing a new kiln at our works which makes five kilns with a capacity of 80,000 brick a day. We manufacture hand-made fire brick which are branded S. F. C. Co. and on which we have built up quite an extensive business started in January, 1903."

The Detroit Fire Proofing Co. has filed articles of incorporation with a capital stock of \$50,000.00. The stockholders are: Albert E. F. White, George H. Paine, trustee and Alonzo C. Raymond.

The hydraulic brick factory of Vaughn & Bowther, Glasgow, Ky., began operations with an output of 30,000 brick per day recently. The machinery for manufacturing drain tile is in the factory, but has not yet been put in operation.

The Montana Brick Works, of Reading, Pa., has been awarded a contract to furnish one million vitrified paving brick for Philadelphia. A number of other good sized orders are being booked, and on April 1, the management will advance the prices from 50c to \$1.00 per thousand.

Reports from Sharon, Pa., state that the firm of J. V. Rose & Son has been incorporated under the firm name of the Sharon Brick Co. This concern manufactures fire brick.

State Geologist Blatchley, of Indiana, states that the various clay industries of that State have more than trebled in the last six years. Clay products to the amount of \$6,000,000.00 were produced in Indiana during the last year.

The St. Paul Brick Co., with a capital stock of \$50,000.00 has been incorporated at St. Paul, Minn., by H. H. Irvine, Alfred Patterson, both of St. Paul, and J. E. Kleser, of Winona.

The great plant of the Whitehall Sewer Pipe and Stoneware Co. at Whitehall, near Jacksonville, Ill., has begun operations. It is said to be the most modern and up-to-date clay manufacturing plant in existence.

The Pacific Clay Manufacturing Co., Corona, Cal., is continuing the development of its deposits on the Santa Ana mountains, and has recently run a tunnel of 200 feet long into a mammoth deposit of fire clay. Heretofore the company has had the non-plastic flint clay, but this deposit has opened up the plastic flint clay, and both are now at the disposal of the plant.

Stone.

LEADING CONTRACTORS.

Sketches of the Plants, the Methods and the Men Who Make the Cut Stone Industry.

PAPER NUMBER TWO.

We were over in Pittsburgh the other day and went around to see our poet friend and cut stone contractor, James B. Clark, of Clark Bros. Co., corner of Preble Avenue and Bayard Street, Allegheny, Pa. Notwithstanding, however, that the boys were looking down their noses when we arrived they cheered up at once and showed us through their yards and offices. The conditions are such that they would naturally be in a very good humor, but accidents will happen in the best regulated families. You all know just how you feel when you are working your plant beyond its capacity and have people hollering for you to do a little bit more and than have some some essential piece of machinery go back on you. We can not do better than express the situation there in Mr. Clark's own words:

"Unlike a great many people in the stone business at present we are very busy, so much so that we have to run our machine at nights. Not that we want to, but that we have to in order to keep our 'hurry up' customers from going completely insane on the 'hurry up' idea, and, of course, when things are run at a high tension something is sure to snap. We over-estimated the lifting capacity of our largest derrick last week on a twenty-ton lift and put it suddenly out of commission with a crash, and you know

When the derrick goes smash in a stoneyard,
And hushed is the hum of the wheels.
The boss is both gloomy and puzzled
And we know very well how he feels.

But this is no age to keep brooding,
We have raised a new Oregon mast,
And the timbers that could not stand upright
Now lie 'mid the wrecks of the past.

Then hurrah for the mallet and chisel,
Hurrah for the wedge and the pick.
We may just as well be in heaven
If we cannot play 'hurry up' quick.

Jas. B. Clark, for Clark Bros. Co.

This firm of cut stone contractors was started by John, James B. and George Clark, three brothers, in a very small way some twenty-two years ago. Honesty, energy and industry made it necessary to increase the business from time to time, and to-day they are more fortunate than some other cut stone contractors in that they have business already placed to cover all they can do this summer.

About ten years ago they decided to enlarge materially and took in a few more clerks. At this time Thomas, Alfred, R. Livingston and John Clark, Jr., became constituent members of the firm.

J. F. Ball, Galetton, N. Y., has assumed the management of the Buffalo and Susquehanna Brown Stone Co., of that place.

The Raritan Blue Stone Co., Perth Amboy, N. J., has been incorporated with a capital stock of \$20,000.00, to carry on business dealing in stone and brick.

Four Italians set upon Orson C. Longyear, the paymaster of the Hudson River Bluestone Co., and robbed him of the money he was conveying to the quarry for the payroll, near Kingston, N. Y. Nearly all of the money has been recovered and the guilty parties are behind the bars.

The Osage Stone and Cement Co., of Clinton, Iowa, has been incorporated to manufacture crushed stone.

The Tufa Stone Co., with quarries at Douglas, Arizona, are in the market for a second-hand quarry outfit. This is a cash transaction. Address El Paso, Tex.

George Haun, Jr., and Oscar Schneider, at Winona, Minn., have recently formed a partnership under the firm name of the Union Stone Co., and will be prepared to do all kinds of contracting in this line.

The Pavonia Stone Co., Pavonia, Ohio, have installed a new system of drills and other machinery and will soon be in a position to fill their orders. They are turning out a fine quality of building stone.

The W. B. Rockwood Bluestone Co. has been incorporated at Albany, N. Y., with a capital stock of \$10,000.00, by: W. B. Rockwood, Mount Hope, Pa.; A. E. Kent, New York City; and N. A. Kent, Crawfordsville, Ind.

The Georgia Rough and Cut Stone Co., Augusta, Ga., are filling a large contract for Belgian block in Chicago, and the stone work of the Waterloo, Iowa, court house which job is in charge of W. E. Boe and is now approaching completion.

The Batavia Stone Co., West Chicago, Ill., has been organized with a capital stock of \$35,000.00. I. S. Stephens, John Hendrickson and Louis Griffith are the incorporators. They will quarry, cut, sell and manufacture stone for building purposes, and the home office of the company will be at Batavia, Ill.

The Greenlee Stone and Building Co. is the style of an incorporated company which succeeds the firm of Robert Greenlee & Son, Denver, Col. The corporation will be composed of Robert C., John R. and William T. Greenlee. This concern takes over the business of the old firm and will continue its operation without interruption.

The Northern Crushed Stone Co., Gouverneur, N. Y., have put a large force of men to work crushing stone preparatory to filling the heavy orders of the spring trade. The backward season has caused the use of raw material to be very short. The company has several large contracts and is crushing seven cars of stone daily.

The American Mineral Co., of Boston, Mass., and Waterville, Vt., has been incorporated with a capital stock of \$50,000.00, for the purpose of quarrying, milling and selling soapstone, talc and other stone products. The directors are: Edwin A. Gordon, Newton Centre; Jennie R. Gordon, Newton Centre; Henry S. Predmore, Waterville, Vt., etc.

Busy Louisville Establishments.

Nearly all the cut stone upon the contract for the Jefferson County jail, located at Sixth and Jefferson Streets, Louisville, Ky., is about completed at Peters & Burghard Co.'s plant. The material used on this job is Bowling Green limestone and the job is now receiving its finishing touches.

This firm also has the contract for the stone work on the English Lutheran Church, located on East Broadway, which is to be built of Bedford buff stone, the corner stone for which building was laid Sunday, May 22, the corner stone itself being a handsome piece of Bedford stone with delicate carvings. Mr. Mason Maury is the architect and superintendent of this structure, which is quite extensive in detail, making a nice summer job for the planers and carvers.

They also have a contract for the new Louisville and Nashville railroad shops in South Louisville, which will be of Bedford stone, and also for the Jewish Hospital in Bowling Green stone, also the public school building on Payne Street, of which Messrs. Hutchinson & Hall are the architects and superintendents. This building will be of Bedford stone upon lines that reflect high credit to the architects, and the intention is to complete the building by the beginning of the school term, however, this does not seem possible at the present time, but the Peters & Burghard Co. have a splendidly equipped plant which is well systematic and is efficiently managed, and they are the kind of people that usually finish at the line of time limited.

This concern also does an extensive business in the monumental line, working a granite department at one of their extensive sheds. They report the monument business at this time as very satisfactory, although it was very quiet for three months or more earlier in the year.

SUPERIOR, Wis., May 28.—Wm. Penn & Co., say, "We have increased our facilities at an expense of \$3,000.00, and have all we can do with a force of sixty-five men."

Nothing Doing in St. Louis.

ST. LOUIS, Mo., June 27.—The St. Louis Cut Stone Co. write: "We have no work on hand at present and are shut down. There is no work in our line going on at present in this city."

Promises to Tell Us Something.

PITTSBURG, Pa., June 28.—The Lindsay Construction Co. write: "We are so busy estimating work which in turn is laid on the shelf, that we can not spare the time to write at any length. I notice in your last issue that you had a pleasant visit from C. W. McCormick, of Cleveland, Ohio. In a short time the writer expects to say something to you along the same lines that will tend to fill up space, even if it does not prove interesting to the readers."



THE CLARK BROS. CO., ALLEGHENY, PA.—CUT STONE CONTRACTORS YARD.

ROCK PRODUCTS.

SUPPLEMENT—TWO PAGES.

INFORMATION SHEET FOR THE USE OF OUR ADVERTISERS.

Vol. III.

LOUISVILLE, KY., JULY, 1904.

No. 4.

MONUMENTAL POSSIBILITIES.

Russell M. Loomis, of Glen Falls, N. Y., was drowned on May 8.

Horace Phillips, civil engineer, died at his home in Seattle, Wash., May 17.

Frank D. Rodgers, Civil Engineer, Los Angeles, Cal., died at that city on May 15.

Samuel Fisk, mechanical engineer, recently died at his home in Mt. Vernon, N. Y.

Carl Laspey, a successful brick manufacturer, died at his home in Miamesburg, Ohio, recently.

Colonel Augustus C. Buel, civil engineer, and author died at his home at Philadelphia, Pa., May 23.

W. S. Tompkins, a prominent and wealthy citizen of Peekskill, N. Y., died April 15 at the age of 84 years.

Miss Susan S. Hankins died recently at the residence of her son, C. S. Hankins, on North Water Street, Decatur, Ill.

Mrs. J. W. Harris, Decatur, Ill., died at the residence of Samuel Dietz, 1571 North Clayton Street, Decatur, Ill., recently.

John T. Paul, superintendent of the Yazoo & Mississippi Valley R. R., died at his home at Mercury, Ala., May 24.

Mr. Thomas Cole, of Westboro, Ont., died at his home in that city recently. He leaves a wife, four sons and five daughters.

Samuel H. Payne, a well-known ship builder, who resided at 139 N. Street, Green Point, L. I., died at the age of 77 years.

W. A. France, Rockwell City, Iowa, a prominent and successful lumberman died May 7, and was buried with Masonic honors.

B. F. Scott, of Atlanta, Ga., died April 17, of pneumonia. He is survived by his wife. The burial took place at Tate, Ga.

Thomas Tozia, died at his home at Dubois, Pa., recently. B. M. A. Tozia, of South Sharon, Pa., is his son, who survives him.

William L. Breck, president of the Flint Brick Co., of Des Moines, Iowa, a very prominent citizen, died at his home recently.

Miss Bessie Penell, daughter of George W. Penell, a well-known wholesaler, of Atchison, Kan., died May 25, of typhoid fever.

George W. Bullock, a well-known lumber dealer, died at his home on Hawley Avenue and Gangwich Street, Pittsburgh, Pa., recently.

Mr. W. L. Rankin, a lumberman of Mars Bluff, S. C., vice president of the South Carolina Lumber Association, died at his home May 2.

Peter Clabeaux, for many years a prominent business man of Buffalo, N. Y., died at his home, No. 193 Morris Street, in that city recently.

Ira A. Gates, died at his home on Floyd Street, in Utica, N. Y., at the age of 81 years. A widow and two married daughters survive him.

M. E. Bell, architect, died at his home 117 149th Street, Chicago, Ill., May 31. He left a widow and two sons, Henry and D. M. Bell, and three daughters.

Andrew Walton, Jr., son of a well-known tile manufacturer, at Princeton, Ill., was killed accidentally on April 8, by falling against some machinery.

William Winegar, a successful and honored citizen of Grand Rapids, Mich., died at his home in that city surrounded by his large family. A widow, three sons, Edward, Louis and Frank, and one daughter, Mrs. Edward W. Tinkham, survive him.

William McKusick died recently at his home at Stillwater, Minn. He was prominent in banking circles and farming, and is survived by his brother Jonathan.

Edward C. Owens, a successful business man, of Oshkosh, Wis., died at his home in that city recently. He is survived by a widow and two daughters.

Peter Van Rensselaer, veteran lumberman, of Albany, N. Y., died at his home, No. 111 Lancaster Street, May 13. He is survived by two sons and a daughter.

Supreme Master Workman, William H. Miller, of the Ancient Order of United Workmen, died June 2. His home was in St. Louis, Mo., where he will be buried.

Wm. H. Veasie, a member of the firm of Veasie, McDuggal & Jackson, pioneers of the logging business, died at his home in Tacoma, Wash., recently. He was a prominent Mason.

Allen J. Sheriff, a prominent business man, and prominent in social circles, died in Mobile, Ala., recently. A large family survive him and their home is in Toronto, Canada.

Mr. Claude McLachlin, member of the firm of McLachlin Bros., of Ann Arbor, Mich., died on April 19. He is survived by Mr. Hugh McLachlin, who succeeds to the business.

Major Thomas Merriam died at his home in Syracuse, N. Y. He was a prominent Grand Army man, and a successful lumber manufacturer. He leaves a widow and one daughter.

Peter Breidt, founder and president of the Peter Breidt City Brewing Co., of Elizabeth, N. J., died May 10, at his home in that city. He leaves a widow and three married daughters.

Patrick Flannery died at his home 368 Pleasant Avenue, New York City, on June 4. He was 84 years of age, had been a contractor all his life, but retired from business some years ago.

Isaac Pruyne, for more than a generation a prominent figure in finances at Catskill, N. Y., died at the age of 84 years. He had been president of the Catskill National Bank for thirty years.

Edward Grady, for many years a Kansas City, Mo., business man, died at his home in Wichita, Kan., recently. His son W. E. Grady is a member of the firm of Mosher & Grady, at Kansas City.

Peter Henkel, president of the Commercial Milling Co., died recently at his home in Detroit, Mich., at the age of 80 years. His large milling interests will be continued by his son, Robt. Henkel.

John Rochevot, for many years connected with the Lion Brewery Co., at Buffalo, N. Y., died at his home in that city April 28. A widow and seven children, three sons and four daughters, survive him.

Alva S. Goodyear, of Tomah, Wis., died after a brief illness. He went to Chicago May 5, to visit his mother who was very ill, and was stricken down with typhoid fever. He leaves a wife and one son.

Charles M. Thomas, of Emporium, Pa., died as a result of an accident on May 5. He was an experienced lumberman, having been connected with the Byers-Allen Lumber Co., of Buffalo, N. Y., for many years.

Charles R. Kellogg, senior member of the firm of C. C. Kellogg & Sons, in which he was associated with his sons, Fred S. and Spencer K. Kellogg, died at his home 286 Gennessee Street, Utica, N. Y., recently.

David R. Fraser, Mechanical Engineer, one of the founders of the Allis-Chalmers Co., died in Chicago, Ill., recently. His widow survives him and also three children, two daughters and one son, Mr. Norman B. Fraser, who is president of the Chicago Portland Cement Co.

The will of Mr. Geo. T. Cook, a wealthy box manufacturer of Marinette, Wis., directs that a simple tombstone, bearing his name and the date of his birth and death be erected.

A handsome monument will be erected at Brockton, Mass., by the Major Jas. E. Frye Camp, Legion of Spanish War Veterans, very soon. It will be a fitting tribute to the dead heroes.

Augustus C. Weaver, Fort Wayne, Ind., died recently at the age of 82 years. He was a successful business man and identified with the development of his city. He is survived by three daughters and one son.

Wm. H. Petree, Senior Professor of Mining Engineering at the University of Michigan, died suddenly at Ann Arbor, Mich., May 26. He is famous as an author of certain scientific publications in the field of geology.

Hon. John W. Deering, Portland, Me., Master Mariner and lumberman, who was connected with the lumber firm of Deering, Winslow & Co., and had been mayor and held many offices of trust, died recently at the age of 71.

Charles G. King, a prominent business man at Cleveland, Ohio, died at the residence of his son, Charles G. King, Jr., 174 Fairmount Street, in that city. Another son, Mr. Ralph T. King, of New York City, also survives him.

James Russell Smith, senior member of the firm of Smith, Fassett & Co., North Tonawanda, N. Y., died at his home on North Street, Buffalo, N. Y., May 24. For many years he was a prominent and public spirited citizen. Address estate.

The Texas Volunteer Firemen's Association, at a recent meeting at Waco, raised an additional \$6500.00, making the total of \$1,500.00 for the erection of the new monument at Austin to the memory of the Volunteer Firemen of the State of Texas.

John W. Kauffman, a wealthy and energetic citizen of St. Louis, Mo., died at his home on Lindell Avenue and Kings Highway, May 25. Harold Kauffman, his son, a widow and two daughters survive him. He has a brother, J. Kauffman, who resides in St. Louis.

Mr. Fred Lazarus, of Columbus, Ohio, has offered to have erected at his own expense a fine shaft in Green Lawn Cemetery to mark the last resting place of those members of the order who have been interred in the Elks' Lot. The offer has been accepted.

A monument will be erected at Jackson, Mich., at a cost of \$10,000.00 to the memory of the fathers, who founded the Republican Party. This has been decided by the "Under the Oaks" Committee and the funds have been raised by popular subscription throughout the county.

Messrs. Frank Miles Day, Harrison S. Morris and Chas. Grafly, after examining the designs for the Vickburg Battlefield monument, ordered by the State of Pennsylvania on June 3, decided that there was not a design of sufficient merit to gain the award and a new competition will take place in October.

Dr. D. D. Bigger, of Tiffin, Ohio, who has engineered the project for the erection of a monument to the memory of the late General Gibson, announces that the necessary funds have been raised to secure the additional \$10,000.00 to be contributed by the State of Ohio, and the committee will now proceed to details.

Claudius B. Pease, died at his home in Somers, Conn., April 22. He was born in 1815, was an active business man, and connected with many enterprises up to the time of his death, and was very successful in everything that he undertook. He is survived by a widow, two grandsons and a granddaughter. Miss Harriet R. Pease, of Greenfield, Mass., his daughter, also survives him.

ROCK PRODUCTS.

BUILDING PROJECTS.

The First National Bank, of New Freedom, Pa., will erect a new bank building of brick and granite.

Dr. J. W. McKibben is getting ready to build a \$9,000.00 brick and stone building at Adams, Nebraska.

C. C. Leysen, Muscatine, Iowa, proposes to build a fine new business building upon his lot in Lucas Street, 30x60 feet.

Steward & Crawford, El Paso, Tex., will erect a four-story business building at an estimated cost of \$40,000.00.

The First National Bank, of Velva, N. D., will soon begin the erection of a modern banking building on the present site.

W. T. Harvey & Co., general contractors, Columbus, Ga., have been awarded the contract to erect a new public school house.

J. F. Stuckert & Son, architects, Camden, N. J., are receiving proposals for the erection of a building for Evanson & Levering of that city.

Dr. H. Tuhoiski, St. Louis, Mo., will erect a four story office building at the corner of Taylor and Olive Streets, at a cost of \$50,000.00.

Fritz Mueller, Omaha, Neb., has secured plans and specifications for a two-story brick building which he will erect at a cost of \$12,000.00.

Mr. John M. Connelly, Elmira, N. Y., intends to erect a four-story warehouse building, which he will use for his wholesale liquor business.

H. J. Carr & Co., contractors, of Atlanta, Ga., have been awarded the contract for the erection of a high school building at Nashville, Ga.

The Elks, of Waterloo, Iowa, will erect a three-story club house this summer at a cost of \$50,000.00 to replace the one recently destroyed by fire.

W. H. Cooley, Holyoke, Mass., will erect a three-story brick block at a probable cost of \$40,000.00, upon lines drawn by W. B. Reid, architect.

C. H. Didden, architect, Washington, D. C., is preparing plans for a parsonage for the Lutheran Trinity Church at an approximate cost of \$10,000.00.

Searles & Hirsch, of Cleveland, Ohio, are preparing plans for a bank building to be erected at Pleasant City, Ohio, for the Peoples Savings Bank Company.

The School Board of Moultrie, Ga., will close a contract for a new school building at an early date, the bond issue having been disposed of for \$26,010.00 cash.

The Perfection Manufacturing Co., Cedar Rapids, Iowa, will build a three-story office building at a cost of \$30,000.00. It is to be of pressed brick and Bedford stone.

The Maryland Casualty Co., Baltimore, Md., will erect a three-story banking building to cost about \$150,000.00, for which plans are being made by Parker & Thomas.

Architect L. M. Drack, is preparing plans for the proposed new school building in South Rock Island, Ill. A bond issue has been voted for the erection of this school.

The Bank of Alba, Alba, Mo., will erect a new bank building as speedily as possible. E. B. Jacobs is president; H. H. Beckwith, vice president and Chas. A. Lewis, cashier.

Architect W. W. Beach, of Sioux City, Iowa, reports that the plans for Davidson Bros. Co.'s new store building will be completed next week and contract let as soon as practicable.

Proudfoot & Bird, architects, are preparing plans and specifications for a hotel at Valley Junction, Iowa, to be of brick with limestone trimmings and will cost \$30,000.00.

W. P. Lipscomb & Co., Washington, D. C., will erect a four-story residence for Ed. A. Mitchel, of light brick and Indiana limestone with terra cotta trimmings. The house will cost about \$30,000.00.

H. N. Leighton Co., general contractors of Minneapolis, Minn., have been awarded the contract to erect the Minneapolis Auditorium at a cost of \$150,000.00. This contract covers the auditorium proper, and the adjoining six-story building, which is a later consideration, will cost an additional \$25,000.00.

The Pere Marquette Railroad will in the near future erect a freight house at its Chicago terminal to cost \$100,000.00. The plans are in the hands of Joseph Llewellyn, and now almost completed.

The Court House commission of the County Board at Milwaukee, Wis., will issue a booklet of instructions to architects, who will be asked to submit sketches for a new Court House at a cost of \$150,000.00.

Architect Schureman has completed the changes in the plans for the new City Hall to be erected at Rockford, Ill. The work will be re-advertised for bidders at once. The limit of cost for the new building is \$80,000.00.

The plans and specifications for the new City Hall of Marlboro, Mass., have been completed. Mayor F. S. Mildon is chairman of the building committee. An appropriation of \$75,000.00 has been made for the purpose.

Stone & Smith, San Francisco, Cal., architects have submitted plans and specifications for a new high school to be erected at Oakland, Cal. It will be erected of brick and stone with terra cotta trimmings, at a cost of \$100,000.00.

The Board of Freeholders, at Jersey City, N. J., composed of William Parison, Alex. Clements, Frank Kimmerly, James Doody, Joseph Griffith and Charles Schmidt will have entire charge of providing the new Court House for the county.

Mr. Doak Aydelott, Tullahoma, Tenn., has organized a stock company and secured \$10,000.00 capital with which to erect a modern opera house. Plans for the structure are in the hands of the architect, who will go right ahead with the enterprise.

H. A. Foeller, architect, Green Bay, Wis., is preparing the plans for a building to be erected by the Wisconsin Telephone Co., at Green Bay. He hopes to have the plans ready in a couple of weeks, when contractors will be invited to make bids on same.

The Sioux City Telephone Co. is having plans drawn by Architect W. W. Beach, for a business block to cost about \$25,000.00, in which their plant will be installed. It is announced that the plans will be completed within a few days, when bids by contractors will be invited.

The City Council of Providence, R. I., have selected the plans and specifications of Martin & Hall, architects, for the erection of a school building which will be of brick with limestone trimmings, to cost \$80,000.00, the necessary appropriation having already been provided.

Plans for the new building to be erected by the trustees of the Robert B. Bingham estate, corner Washington and Beach Streets, Boston, Mass., has been filed for approval in the Department of Building Inspection. A. H. Vinal is the architect, and the general contractors are Joseph Nicholson & Son.

The City Council of Macon, Ga., have appropriated \$15,000.00, for the erection of three new buildings at the Central City Park for the use of the coming State Fair. The plans of Ellis & Denney, architects, of Macon, Ga., were accepted, and this firm will also superintend the construction of same.

The Swiss Benevolent Society, of New York City, will build a home on Sixty-seventh Street, East of Columbus Avenue. It will have a decorative facade of brick and limestone, with terra cotta trimmings, at an estimated cost of \$55,000.00, upon lines drawn by John E. Scharsmith. The present home of the society is 108 Second Avenue.

D. X. Murphy & Bro., architects, Louisville, Ky., are preparing plans and specifications for a modern newspaper building to be erected by the *Louisville Evening Post*. The newspaper company has acquired a fine location in the heart of the city, and will let the contract for the erection of the new building as soon as the plans and specifications are ready.

Dr. W. E. McIlwain, Birmingham, Ala., president of the Board of Trustees of the Synodical College to be located at Anniston, Ala., is making the final arrangements with regard to a site for the college building which will cost \$50,000.00, and the intention is to have the building ready for occupancy by September 1, 1905. The drawings have not yet been accepted.

MACHINERY TALK.

The Co-operative Granite Co., of Indianapolis, Ind., say they have secured the agency for George Oldham & Son, of Frankford, Philadelphia, and are now handling all kinds of pneumatic machinery. They throw bouquets at ROCK PRODUCTS by saying that they get more valuable information from it than any other paper that they are able to secure. They announce that they have installed new lot of pneumatic machinery recently in the plants of the following firms: Carpenter & Brown, Bloomington, Ind.; John Henderson, Lebanon, Ind.; M. Unger, Columbus, Ind.; J. H. Brooks, Greenfield, Ind.; Bills & Wiseman, Fortville, Ind.; Goth & Co., Indianapolis, Ind.; Indiana Marble & Granite Co., Indianapolis; T. A. Retaille, Barre, Ill.; Bradley & Voorman, Chicago, Ill.; Seymour Monument Co., Seymour, Ind.; Red Key Monument Co., Red Key, Ind.; Spidle & Richardson, Sheridan, Ind.

The Kent Mill Co., 170 Broadway, New York City, are supplying the following information of extensive improvements in their wide circle of influence.

The E. O. Painter Fertilizer Co., Jacksonville, Fla., owned by Little Bros., of that city, are building a strictly up-to-date fertilizer factory. Messrs. Walker & Elliott, of Wilmington, Del., are putting in all the machinery including a Kent mill.

The Virginia Carolina Chemical Co., are remodeling several of their fertilizer plants and putting in Kent mills to grind their phosphate rock.

The Western Portland Cement Co., Yankton, S. D., are enlarging their factory. They have been running three Kent mills in their clinker room and are now putting in three more, and also equipping their coal grinding department with the same machines.

The Alabama Phosphate Co., of Montgomery, Ala., are equipping their new factory with Kent mills.

The Austin Manufacturing Co., 1017 Park Row Building, New York City, announce that Mr. D. H. Lawton has taken charge of the New York offices of the company. Mr. Lawton is a practical crusher man, having been connected with the sales of Gyrator crushers for a great number of years, and is at present interested as one of the proprietors of a large crusher plant. Any one desiring crushing machinery of any description will find it to his advantage to write to Mr. Lawton.

The George Raymond Mill Co., 951 Monadnock Block, Chicago, Ill., have just finished and tested one of their latest air separator plants for the American Kaolin Co., at Akron, Ohio, and it has been reported that it is the finest and most successful air separator plant ever erected. This report came direct from the American Kaolin Co. They are also completing a large pebble mill to be erected at Riverside, Ill., for the Indiana Destructible Paint Co. This is one of their latest improved mills and with air separator to be attached gives promise of being one of the most successful modern mills in the country.

The Ross-Keller Triple Pressure Brick Machine Co., Fullerton Building, St. Louis, Mo., has completed a four-mould plant for the Poteau Pressed Brick Co., of Poteau, I. T. The first kiln of brick is now being burned. They have just shipped a similar outfit to the Fond du Lac Cement Brick Co., Fond du Lac, Wis., and this press was purchased after the company's expert had examined all the dry presses on the market, and after a most exhaustive test; also, they are now shipping a complete four-mould outfit to the Peltier Pressed Brick Co., of New Orleans, La. The press will be installed in their yards at Port Vincent, La., during the next few weeks. An order has just been received for a complete four-mould outfit from the Madill Pressed Brick Co., of Madill, I. T.

The offices of this company are in the Fullerton Building, St. Louis, Mo., and they report trade conditions generally as prosperous, with a good call for brick machinery from all parts of the country, especially for "the only triple pressure brick machine."

The Thos. H. Dallett Co., of Philadelphia, report business with them in the pneumatic stone tool line as being extremely satisfactory, large shipments abroad and to the Pacific Coast, being features of last month's business which was the largest in the history of the company.

Quarries.

The National Quarry Owners' Association.

D. McL. MCKAY, Chicago, Ill. President
 W. H. WALLACE, Bay Port, Mich. First Vice President
 F. A. BROWN, Aberdeen, S. D. Second Vice President
 S. M. HALL, Bucyrus, Ohio. Third Vice President
 E. H. DEFEBAUGH, Louisville, Ky. Secretary-Treasurer

Official Organ, ROCK PRODUCTS.

Splendid Exhibit of Bedford Stone.

In the Palace of Mines and Metallurgy at the World's Fair a very fine exhibit is made by the State of Indiana of her celebrated Oolitic Limestone. The space occupied by this exhibit is 30 by 40 ft. The exhibit consists of samples of blue and buff stone. The blue stone is from the Hunter Valley, the buff stone is from Mather's Quarries, both at Bloomington, Ind. Around the exhibit are different patterns of stone balustrades, and in the center is an immense table in one perfect piece of buff Oolitic limestone. This is from Mather's Quarries. It is 16 ft. 10 in. long, 4 ft. 6 in. wide and 8 in. thick. It is supported by six massive, turned legs of the same kind of stone. It is intended to show upon this table samples of stone from the various quarries of the State. At the time of writing only four of these were in place, these were: a miniature store front, polished cubes and an urn, from the United States quarries. An interesting carved piece of buff oolitic limestone from the Bedford Quarries Co., represents a massive bolt and nut. This is set upright on an artistically designed and carved base of blue stone. The nut is a "practicable" one, that is it is threaded and works freely upon the screw of the bolt. This can not be claimed to be an example of high art nor of monumental sculpture, but it is the most unmistakable evidence that could be offered of the qualities this Oolitic limestone possesses to recommend it to the sculptor and the stone mason. On the table we also find a block of blue stone, with one surface highly polished, the others rustic. This is from the Blue Stone Co., Bedford, Ind. The Chicago and Bloomington Stone Co. also sent some samples of its output. At the rear of the exhibit is seen a fine, large arch of buff stone on bases of blue stone. The architect who designed the exhibit is W. H. Mahurin, Fort Wayne, Ind. The State Commissioners for the stone exhibit are: Mr. W. W. Wicks, Bloomington; Mr. Kinsey, Newcastle, Ind.; Mr. Grass, Huntington, Ind.

The object the State of Indiana had in making the exhibit is to show the good qualities of Indiana Oolitic limestone for use in sculpture, for building, for general decoration and for rustic monumental work. The stone is soft when quarried and is very easily cut, but it possesses to a high degree the valuable property of hardening on exposure to the air. The exploitation of this limestone is in the hands of some fifty different interests in the counties of Monroe and Lawrence.

The exhibit, which is extensive, handsome and interesting, is in charge of Mr. T. W. Simmons, of Bloomington, Ind. This gentleman is intimately connected with quarry interests and is very able and very willing to give all information desired.

Another Quarry in Dark Hollow.

BEDFORD, IND., June 10.—Mr. Wm. H. Matthews, writes, "I have commenced opening a quarry in the celebrated Dark Hollow region near Bedford. The quality of the stone I am taking out is excellent." Mr. Matthews was manager of the P-M-B stone quarries for over twelve years, and he has been connected with the stone quarrying business all his life. His valuable experience will prove very useful in his new undertaking.

Prospect of Better Railroad Facilities.

Mahan & Co., 1116 Chamber of Commerce Building, Chicago, Ill., have sold their stone planing machinery to the Central Oolitic Stone Co., at Bloomington, Ind., and have acquired an interest in their quarry. Mahan & Co., expect to do considerably more business this year with their increased capacity, in the straight sawed stone and block business. It is reported that the Illinois Central railroad is buying the Indiana Southern railroad, which will give them an entrance into Indianapolis, Ind., and will probably connect with their line to Nashville, giving them a Southern outlet in connection with the greatest railroad system in the South.

Making Extensive Improvements.

NEW PARIS, OHIO, June 7.—Reinheimer Bros. write, "We have put in a new gyratory crusher which we will run in tandem with our old No. 3. Our bins will hold 400 yards of marketable product. The weather has been very much against us, and has delayed the erection of our plant, but think we will have an up-to-date plant when it is completed. We have an original scheme for delivering stone from the quarry to the crusher. The idea is a good one; we have seen nothing like it in use. The city of Richmond, Ind., obtains all the stone used on its streets from these quarries. The Pan Handle railroad is now building a switch to the quarries."

Bromley & Tenney, Granville, N. Y., have erected a derrick at their new quarry and will push the work upon same.

The Delphi Stone Crusher Co., of Delphi, Ind., have begun operations with a full complement of men turning out 25 carloads of crushed rock per day.

James Burke, East Plymouth, Pa., has opened a stone quarry and is now prepared to furnish very excellent building stone at a price of 30 cents a ton.

Mr. Herbert George, Denver, Colo., reports that the George Limestone quarries located at Laramie, Wyo., have commenced shipping their product in large quantities.

John DeMichiel & Bros., Torrington, Conn., have opened up a new quarry and are obtaining stone of a very high quality. They have several large building contracts to fill.

John R. Tresswell, Bowling Green, Ohio, will open a large stone quarry on the Elliott farm, where he expects to establish a stone crushing plant and cement block factory.

The American Insulating Material Manufacturing Co., of St. Louis, have purchased the Booth quarry at Alexandria, Ind., adjoining their works at that point and will operate same and have purchased equipment.

The Missouri Valley Stone Co., Kansas City, Mo., has been incorporated with a capital stock

of \$3,200.00. The incorporators are: David N. Hyre, Daniel R. Moody, Wm. I. Blanton and others.

The Standard Crushed Stone Co., Camden, N. J., has been incorporated to work quarries and crush stone. The capital stock is \$50,000.00. It has been incorporated by M. Wiegand, M. W. Darnell and W. S. Darnell, all of Camden.

Henry Struchen, Fort Branch, Ind., near Princeton, Ind., will open a rock quarry in the near future. The quarry will be some distance from the railroad, but the E. & T. H. Co. will build a track to the property. Those who are in a position to know say that the rock is of fine quality for road building.

The Sexton Building Material Co., Chicago, Ill., has purchased the old Zarley quarry near Joliet, Ill. T. D. Sexton, is president of the Sexton Building Material Co., which has been specially organized for the Joliet branch of the Sexton Brick Co. They will manufacture mainly crushed stone to be shipped to Chicago. A massive crusher is being installed.

Professor L. V. Case, Geologist, at the Washington Irving High School, Tarrytown, N. Y., reports that radium has been discovered in the spar quarry at Bedford, Westchester County. A radiograph has been made from the ore. The Scientific Department of the Columbia University is to send twenty-five pounds of the ore to the St. Louis Exposition for exhibition.

A syndicate of Philadelphia capitalists, headed by W. T. Bradley have acquired a tract of 450 acres of lime stone land located near Martinsburg, W. Va., on the B. & O. railroad, for which they paid \$350,000.00. The tract has been considered the most favorable stone land in the section of country famous for its fine quality of limestone. It is reported that a quarry of extensive proportions will be opened immediately.

The Nicholson (Pa.) Stone Co., consisting of E. A. Clark and other Scranton capitalists, and H. D. Tiffany, of Nicholson, have bought the quarry property of the Carlucci Stone Co. Mr. Tiffany will manage the affairs of the new company. As soon as arrangements can be made, a stone mill will be put in, and other improvements made at a cost of \$10,000.00. It is claimed that the quarry is one of the best in that part of the country.

We were fortunate enough to catch our friend, George McArthur, who had recently returned from an Eastern trip. Mr. McArthur is head of sales for the Independent Stone Co., in their offices at Cleveland, Ohio, and we learned from him that all of their quarries are now running at full swing getting out material for a church at Springfield, aside from their general run of business on grind stones, curbing and building materials. Mr. McArthur reports business fairly good in the East. Some changes were made in the officers of the new organization, and the present officers are: J. A. Beidler, president; C. J. Brokenshire, vice president; D. J. Kurtz, treasurer and J. A. Beidler, Jr., secretary.



Exhibit of Bedford Stone at the St. Louis Exposition.

Monuments.

Business is Very Satisfactory.

JACKSONVILLE, Fla., June 28.—The George W. Clark Co., report that they have found the monumental business very satisfactory this year. "We have on hand at the present time over \$10,000.00 worth of monumental work, but the only job of any note as a monument is the one we are furnishing for Mrs. Abbie R. Dodge, late proprietress of the Windsor Hotel in this city. It will be erected in Woodlawn Cemetery at a cost of \$2,000."

Largely Increasing Their Business.

HOT SPRINGS, Ark., June 28.—Mills & Lane, proprietors, of the Hot Springs Marble and Granite Co., say: "Business is extremely good for this season, as the spring is always our dull time. We have recently bought the business including the entire stock of marble, stone, granite, etc., of F. P. Bailey & Co., of this place. We will move the stock to our place, making one of the largest establishment in the monumental line in this State."

Enterprising Firm Reorganized.

Mt. STERLING, Ill., June 24.—The Modern Marble and Granite Co., has erected one of the largest and best made dark Quincy granite monuments recently that has ever been placed in the Perry Cemetery, for Mr. J. R. Walker. B. F. Hummer has sold his half interest in the Modern Marble and Granite Works to E. H. Stover, of Mt. Sterling, Ill., and the new firm will be A. Carpente and E. H. Stover. Mr. Stover is a practical workman of high attainments.

Good Trade Reported.

TAMPA, Fla., June 28.—Mr. N. D. Smith, of the Tampa Monumental Works, of Tampa, Fla., says: "We have had a very good trade for this section of the country, and have on hand some good orders to fill at the present time. When we took the business three years ago there was scarcely work enough for one man, but now we have been able to keep three men at work in the shop. We have been helping in the organization of a plant to manufacture sand-lime brick and expect to get it in operation in about ninety days. We have the finest kind of sand for making these brick and have provided in our charter for the manufacture of hollow cement building blocks. It is probably that the city will issue bonds to the amount of \$500,000.00, to carry on paving sewerage improvements, and in that case we will need large quantities of paving brick, sewer tile, etc."

Will Soon Be in Operation.

TUSCALOOSA, Ala., June 26.—Mr. T. H. Wildman writes: "I am installing an outfit of the Blaisdell Machinery Co., and will soon have the monumental works in active operation."

R. W. Greenizer will establish a monument business at Gaylord, Mich., soon.

J. E. Lutz, Blair, Neb., will put in pneumatic machinery to operate his marble shop.

The Pontiac Granite Co., Pontiac, Ill., report a good business with quite a large amount of work in hand consisting of monuments and burial vaults.

Hon. Daniel B. Lucas, Charlestown, Va., is at the head of a movement to erect a monument in honor of J. Ramsey, the inventor of the steamboat.

John C. Beck, Bainerd, Minn., has bought the marble business of Christ Shurson and will continue the business, turning out all kinds of monumental and stone work.

The Larned Marble and Granite Co., Larned, Kan., has been brought out by T. E. Moore and William Jennings. They will operate the plant under the firm name of Jennings & Moore.

Mr. W. H. Mackey, Rensselaer, Ind., has a contract for the erection of a monument at Lowell, Ind., for the Spindler family, four of whom perished in the Iroquois theatre.

The Pittsburgh branch of the Daughters of the Revolution have offered to purchase the site of Fort Necessity, at Uniontown, where they propose to erect and maintain a monument.

The Drinkwater and White Co., Fort Scott, Kan., who recently engaged in the monumental business at that place report a flattering business. Some of their jobs will require months to get them out.

John G. Taylor, Westchester, Pa., will spend a fortune in beautifying the old burial ground with costly monuments. He is having plans drawn for statues of Christ, the Virgin Mary, Lazarus and other biblical characters.

The Board of Public Service, Tiffin, Ohio, is considering plans for the building of a monument on a lot in Green Lawn Cemetery, which has been purchased for the interment of bodies taken from the old Tiffin Cemetery.

Joseph H. Peter & Co., Louisville, Ky., has been incorporated with a capital stock of \$20,000.00, to manufacture and handle monuments and stone work. The incorporators are: Joseph Peter, Edward F. Webster and H. Almstedt.



A Design Produced by Perry & Jones, Barre, Vt.

Herman A. McNeil, College Point, L. I., N. Y., the sculptor who designed the central cascades at the St. Louis exposition, is at present at work on a heroic statue of President McKinley, which is to stand in front of the State Capitol at Columbus, Ohio.

Jennie & Mundie, architects, Chicago, Ill., have been awarded the contract to erect Tennessee's mammoth memorial monument in the Vicksburg Federal Cemetery. The design is similar to that of the great Pantheon at Rome, and quite a departure from the designs erected by the State of Ohio and other States in the cemeteries.

The Worden Bros. Monument Manufacturing Co., which has been located at Danville, N. Y., for the last fifteen or sixteen years have reorganized and are building a new and entirely modern mill at Batavia. They are also running a branch at Rochester, N. Y., which is in charge of Harry B. Allen. Mr. Worden has been to Barre and the East selecting machinery for the new plant.

The Reedsville Marble Works, Reedsville, Wis., which was recently destroyed by fire, will be rebuilt. The construction of same has already begun.

In the marble quarries of Carrara, Italy, the greatest single blasting operations ever undertaken have been accomplished, resulting in loosening a huge block of marble valued at \$60,000.00.

A syndicate of capitalists headed by George C. Underhill, of Rutland, Vt., have purchased 2,000 acres of valuable marble land in the town of Danby, where they will open several new quarries in the near future.

MARBLE.

The Tennessee Producers Marble Co., Knoxville, Tenn., have begun shipping the product of their quarry.

The Danby Marble Co., of Danby, Vt., has recently been incorporated with a capital stock of \$5,000.00.

The Barney Marble Co., Swanton, Vt., are now running a full force of over 100 men, and they are working overtime.

The Vermont Marble Co., Burlington, Vt., has purchased marble property in Danby, Vt., and will begin at once to develop same.

William H. Burke, a member of the firm of Burke & Co., London, England, has made a contract with the Vermont Marble Co., of Rutland, Vt., for a large quantity of marble work.

The New York Marble Co., Gouverneur, N. Y., have elected the following officers: James C. Beach, president; George B. Massey, treasurer and A. M. Jenson, secretary.

The American Marble Co., Washington, D. C., has been incorporated with a capital stock of \$1,000,000.00. The incorporators are: E. W. Ostrom, H. Selleg, Owen H. Fowler, Philip Tindall and John R. Lang, Jr.

The New York Marble and Granite Quarrying Co., Harrisville, N. Y., has been incorporated with a capital stock of \$10,000.00, by: J. J. Sullivan, Daisy L. Sullivan, of Harrisville; and, W. E. Smallman, of Malone.

In the Georgia Forestry Exhibit at the Exposition at St. Louis, Mo., there is a Georgia made club house grate that is attracting much attention for its exquisite beauty. The fire jams are of antique marble from Holly Springs, Ga., and a hearth of vari-colored Georgia marble from Tate, Ga., both parts of which were contributed by the Kennesaw Marble Co., of Marietta, Ga.

Sherman & Flavin, Chicago, Ill., who have been engaged in marble work for interior finish, note the increased expenditure for this purpose. The magnificent execution in marble of the staircase in the Annex of the Auditorium by this company has attracted the attention of thousands of guests from all parts of the world, and people study the marble interior of the Illinois Central Depot in Chicago a.s.o.

J. Noble Jones, secretary of the Great Northern Marble and Onyx Co., Spokane, Wash., which owns quarries at Blue Creek, Wash., says: "Our plant has been idle until we could get enough money to put in finishing machinery. The quarries are opened up and we have demonstrated that we can ship it. It will take \$15,000.00 to put in the machinery we need, and we expect to get this in by next fall."

The Crystal Marble Co., Spokane, Wash., have extensive plans for increasing the output of their quarry. G. M. Annis, president of the company said: "We are working fifteen men at our quarries near Colville. It is our intention to install new machinery at the quarries this summer which will increase our output, and our plant in this city will be enlarged to three times its present size, which will mean considerable more machinery here."

The Keystone Marble Co., Lebanon, Pa., has only made its bow to the public, but its extensive plant is almost taxed beyond its capacity for building, interior and cemetery marble. They have been getting out stone that compares favorably with the best marble or granite in the market and they are prepared to take orders from reliable stone contractors. Among the orders they have received recently is one from Mr. M. S. Hershey, the millionaire chocolate manufacturer, of Derry, Pa., for an expensive sarcophagus, weighing when completed 20,000 pounds.

Important Meeting of Marble Men.

CINCINNATI, Ohio, June 28.—The National Association of Marble Dealers met at the Gibson House yesterday, all firms in the organization being represented by delegates or proxies. The following officers were elected: President, W. H. Evans, Baltimore; vice president, Peter Gray, Philadelphia; treasurer, J. F. Jacoby, Philadelphia; secretary, Fred P. Bagley, Chicago. A permanent fund of \$175,000.00, either in cash or securities, was provided for. The purpose for which this fund is to be employed the association declined to state for publication, but it is inferred from other things said that it will be used in case of strikes or other labor troubles.

Slate.

Yellow Slate for Roofing Purposes.

HOT SPRINGS, ARK., June 20.—William H. Von Hartman, geologist and prospecting mineralogist, who has been tracing the slate field of Arkansas for several years, and is now compiling a review of the entire field for government information, says: "I have discovered a mountain of yellow slate which is very fine for roofing purposes, the only deposit of the kind in the world so far reported. I sometimes wonder if slate men know that there are but two known slate deposits in the world which are fit for use as roofing slates?—i. e. Washington County, N. Y., (the ledge extending across into Vermont and Arkansas, and that Arkansas contains 90 per cent. of all the red slate I discovered. This State also has seven different colored slates of workable quality."

The operators of slate quarries in the region about Bangor, Pa., have shut down for a week to restrict production and maintain prices.

F. F. Bennett has opened a slate quarry at Danielsville, Pa., under the management of W. H. Siep. It is said that the quality of the slate taken out is very good.

Milton Ruby and W. D. Diller, of York, Pa., have secured mining rights on lands containing slate deposits which have recently been discovered near Glatfelter's station.

The stock of the late W. H. Hughes Slate Co. has been sold at public auction in Granville, N. Y. E. R. Norton bidding off the entire lot at 20 cents a share. The receipts were \$35,000.00.

The Williams Slate Co., Arvonia, Va., has recently imported a number of Italians to work in their quarries. The call for slate is so great that the labor supply is found totally inadequate for the demands.

The Kansas City Slate Quarrying Co., Kansas City, Mo., has been capitalized at \$100,000.00 to manufacture slate by-products and operate quarries. The incorporators are: W. E. Zahner, of the Zahner Manufacturing Co., president; Charles F. Ettwein, vice president and W. M. Ryerson, treasurer. The company will control slate mines in Polk County, Kansas.

The slate operators of Granville, N. Y., including representatives of all the interests of the immediate neighborhood entertained the Vermont and Pennsylvania slate producers at an elaborate banquet at the principal hotel of that city, which was highly enjoyed by all the participants. What transpired at this slate convention during the business sessions is kept a secret. This mental stoicism towards the public may be unwise, but it does not alter the condition. What the slate operator knows about the business, the market or prospects he retains as personally confidential, but, it is supposed that a co-operative plan is being effected by which prices can be made uniform.

California Black Slate.

Edwin C. Eckel, of the *Journal of Geology*, describes a black roofing slate from Eldorado County, Cal., which carries between its beds a strip of green slate which is apparently of igneous origin and seems to have been injected between the black slate masses. Analyses of W. T. Schaller of the United States Geological Survey, give the following components:

SiO ₂	Al ₂ O ₃	TiO ₂	FeO	CaO	MgO	CO ₂
			FeO			FeO

Black slate....63.52 16.34 6.79 0.98 2.50 4.86
Green slate....43.15 16.33 6.42 6.42 8.72 11.28

This black slate has received commercial development.

NORTH WALES.

Account of New Quarrying Methods Now Being Introduced.

BY H. HUMPHRIS,
Member North England Institute Mining & Mechanical Engineers.
Member South Wales Institute Engineers.

(*Begin in June Rock Products.*)
Electricity Will Play Important Part.

It is proposed at a later period to fully equip the place, both on the surface and underground, electrically, and in fact electricity will play an important part in the workings now being opened out.

We will now describe in brief the system at present employed in extracting the rock from the quarry by mining underground, and will endeavor to give some idea as to the cost which would be occasioned in the first place, in work of a preparatory nature, which would be necessary in opening out the southwest portion of the estate, where the new vein, one of the finest in the district, runs through the property.

That portion of the vein which it is proposed should be worked by the new mine forms a piece 2,000 feet long by 1,400 wide, and has a thickness of about 100 feet, and contains over twenty million tons of slate rock, after making due allowance for rock that is worthless through contact with the overlying "hard" and other causes. It dips from south to north at an angle of twenty degrees, and lies between two beds of granite.

Usual Method of Opening Vein.

In opening out such a vein the usual procedure would be to start at the southern end of the vein where it crops out to the surface, and on top of same (in the center) drive an inclined tunnel to the bottom or north end of the vein. This tunnel would have to be about 10 feet wide by 7 feet high, and the driving of same would necessitate the wasting of about 10,400 tons of rock, and would cost for driving and clearing and tipping of the rubbish, about £5,600.

When this main tunnel was down it would then be necessary to drive off left and right at every 250 feet tunnels from which to commence the working of the various floors. These cross tunnels would be required 7 feet by 6 feet, and for the working of the whole block of 2,000 feet by 1,400 feet by 100 feet, nine of them would be required; one for each floor, each to be 1,400 feet long. The nine tunnels would necessitate the removal of 33,600 tons of rock, at a cost for driving and clearing and tipping of the rubbish of upwards of £17,350.

The cross tunnels having been driven forming the different floors, the next step would be to apportion each floor out into the necessary pillars and bargains, say pillars 40 feet and chambers 100 feet wide. The chambers being apportioned off, the next item is one for what is termed "unroofing and widening," that is cutting out the slate rock on the top of each bargain, next to the "hard" for a thickness of about three feet through from one floor to the next above.

The unroofing in this case would mean the destruction of 444,500 tons of rock, and for mining and clearing and tipping the rubbish, and providing free sides, would cost about £130,000.

The pillars which it would be necessary to leave in, in this, the descending system of working, would mean a total amount of slate rock being left unworked equal to 5,333,300 tons.

Cost of Quarrying on the Old System.

We find that the work of a preparatory nature would waste rock to the following amount: In main tunnels 10,400 tons, in cross tunnels 33,600 tons, and in unroofing 444,500 tons, which equals in amount going over the tip of 488,500 tons, and we have left in the quarry in the form of pillars, 5,333,300 tons, which therefore gives a total loss in rock of 5,821,800 tons. Deducting this amount from the total available rock, which we find is 20,740,700 tons, we are left with 14,918,900 tons of rock for slate-making purposes. Of this, one-half would be wasted in working and the other sent to the mill for dressing into slates. The latter would eventually yield about 1,865,000 tons of dressed slates, or say in round numbers 2,000,000 tons of a value of at least £7,250,000, which taking the profits at 15 per cent. would yield £1,087,-

500 or an average yearly profit of about £15,000 taking the life of the quarry at about 80 years. So much then for quarrying on the old system.

We now turn to the estimated cost of preparing and opening out a quarry in the same ground, only on the system which is now being adopted at Rhiewbach, but which can only be adopted in new workings, as it can not be properly applied in quarries already extensively worked on the descending system.

It would perhaps be advisable here to state that the chief saving in this system is in the preparatory or unproductive work.

The New System Being Adopted.

As in the preceding case the first work necessary is to drive an inclined tunnel in the same manner and of the same dimensions as before, which would result in the loss of 10,400 tons of rock, at a cost for driving and clearing and tipping the rubbish of £5,600.

When the main tunnel was down, instead of opening out in the usual way with a number of cross tunnels to form the various floors, only one such cross tunnel will be required, and that will be at the foot of the inclined tunnel extending left and right from same.

This tunnel would be 7 feet by 6 feet and will necessitate the removal of some 3,550 tons of rock, the cost of which will be for miners and clearing and tipping the rubbish about £2,000.

The next item is for cutting free sides, as it is intended to cut a loose bottom and roof with the wire saw, about which further will be added later.

These free sides will be extended forward and upward as the work advances, but in the end they will result in a total loss of rock of about 400,000 tons, at a cost for miners only of about £11,000.

The wire saw will next be brought to work to cut the top and bottom 6 feet apart, leaving the rock free for the rockmen to remove. They starting from the bottom of the inclined tunnel will then be ever advancing forward and upward, and as no workable rock will ever be under them the rubbish instead of being loaded, pulled out and tipped, will be stowed in behind them. By this means the roof should always be safe from falls as no large area will ever be unsupported. Further, the roof will be accessible to examine, which can be done daily by the men employed without any cost, whereas on the old system the cost of such examination frequently runs as high as 4c per square yard, independent also of the accidents that happen from time to time through pieces becoming detached and dropping.

The Result in Detail.

We find that the waste in preparatory work has been as follows: In main tunnel, 10,370 tons, in cross tunnel 3,730 tons, in free sides 400,000 tons, which equals in amount going over the tip of 14,100 tons, and left behind for stowing in from the free sides 400,000 tons, a total wastage of 414,100 tons. On deducting this amount from the total rock available, namely, 20,740,740, we are left with over 20,000,000 tons of rock for slatemaking purposes. This amount when worked out will, it is estimated, yield at the least 10,000,000 tons of blocks for slatemaking, and the same amount will be stowed in the old workings.

The blocks sent to the mill should, owing to their more regular and even shape, yield one-third slates against the one-fourth of the old system. The amount named as being left in as waste is in excess of what has been found to be the case in practice, but this has been done to be assured of not over-valuing the system.

We find that the ultimate yield of slates will be about 3,340,000 tons of a value of about £12,000,000 which, taking the profits at 15 per cent. would yield £1,800,000.

The difference therefore on *slates alone* between the two systems amounts to £712,500, and to this amount must be added the difference of cost in the preparatory and unproductive work, and it may be mentioned here that the profit named, 15 per cent. has been taken the same in both cases, in order that the amount saved may be here shown.

The amount saved in the main tunnel is nil.

The amount saved on the cross tunnel is the difference between £17,350 and £2,000—£15,350.

The amount saved in the cutting of free sides only as compared with the free sides and unroofing of the old system is the difference between £130,000 and £11,000 which equals £119,000, and lastly the rubbish or waste.

(To be continued.)

Roofing.

Success Won Upon High Merit.

C. B. Jameson, the Buffalo (N. Y.) member of the Board of Directors of the National Association of Master Composition Roofers, located in that city in 1887, bringing with him a good knowledge of the business and previous experience in the taking and handling of contracts. He was soon so actively engaged in getting next to the people who had roofs to build that trade came his way liberally and he has since been able to keep in line with that class of work, so that he has large operations in hand in all parts of the city and elsewhere in the locality, not excepting the neighboring part of Pennsylvania. He handles a number of styles of composition roofing and finds that it is steadily growing in favor, most factories and warehouses coming to the builder with that class of roof specified. As an indication of the high class of work he has done in Buffalo of late may be mentioned the roofs of the Manufacturers' and Traders' Bank, Fidelity Trust Building in the business center of Buffalo, and the Jacob Dold packing House, Wagner Car Shops and Gould Coupler Works at East Buffalo and Depew. He has for a considerable time taken much interest in the affairs of the Buffalo Builders' Exchange, and last winter was elected president of it, a position he maintains with great satisfaction to the members. Though not having been well of late, aside from being much occupied with business, he is striving to arrange affairs so that he can attend the annual meeting of the National Association in St. Louis this summer.

Roofing Conditions in Chicago.

CHICAGO, ILL., June 28.—The roofers all over the city are having favorable weather for their roofing business. Contracts for covering the many buildings approaching completion have been let by the score during the month, many of these going to the oldest and most experienced roofers. Slate and tile are the two favorite roofing materials in Chicago on elegant private residences, with either of these a good substantial roof, proof against fire is assured, and expert roofers consider this the best material for securing a desirable and substantial roof. Several roofing firms here are engaged almost exclusively in supplying this material and say that it is growing in favor. Most of the slate that reaches this market comes from the fine slate quarries in Vermont.

Many of the large roofers who have been engaged in the business for many years have adopted all the modern methods and materials, but each one has his own specialty, in all cases having as the base of their claims the longevity of the materials used, as well as their fireproofing qualities. Large stocks of material have to be carried, and several large roofing establishments here cover several acres of ground with buildings filled with many thousand dollars worth of roofing stock.

Pointed Personal Paragraphs.

An old pioneer in the roofing business in the city at the present time is the firm of M. W. Powell & Co., Colonel Powell being at the head of the firm. This is one of the largest and oldest roofing firms in the United States. Colonel Powell has been in the roofing business since 1850, at which time he entered the employment of B. F. Barrett occupying the position of foreman, and then as general manager until 1855, when he purchased an interest in the business, until 1882 when he became sole proprietor. This firm employs the best skilled labor and their extensive business reaches to every city in the Union, and in the foreign countries as well. As a skillful financier his career in the roofing business has been marked with success. The great start was begun prior to the 70's, but when the fire came in '71 the firm furnished the city with an immense amount of work and paved the way to fortune. Colonel Powell is also an inventor. Many of the appliances used by the roofers everywhere are due to

his genius. The offices of the firm are located in the Marquette Building, 204 Dearborn St. This firm does all kinds of roofing, combined flax felt, and wood felt, and actinolite roofing, patent tile roofs for roof gardens, Portland cement, asphalt, etc. They have extensive yards on State Street and report business fairly good and prospects good for summer work.

G. B. Stoops & Bro., 449 Grand Avenue, does an extensive business in the line of felt composi-

The Illinois Roofing Co., 14 State Street, report business quiet at present, but they look for more activity a little later on. The cornice feature of their business is a most important one. They do a large amount of galvanized iron work. E. N. Biegler is manager, and is a hustler. He is a rapid talker and always goes straight to the point in matters of business.

Doing More Country Business.

CHICAGO, ILL., June 6.—J. M. Elliott, writes, "My business in Chicago is about the same as it was last year, but I am doing 50 per cent. more work in the country. Most of it is taking off iron roofing and replacing it with felt composition and gravel roofing. I have also done a lot of re-coating on gravel roofs that have been on five years or more. The people are using the composition roofing more than ever as they find it is most durable and the cheapest, too, when properly put on. I have also covered a number of shingle roofs both in Chicago and in the country with the old-style ready roofing. Some of this that I put on several years ago I find to be in good condition."

The Roofbestos Manufacturing Co., St. Louis, Mo., has been incorporated with a capital stock of \$3,000.00, by Walter A. Zelnicker, I. Seligstein, A. Seligstein and Louis Rosenthal.

The Chattanooga Roofing and Foundry Co., Chattanooga, Tenn., has just completed building a big addition to its plant consisting of a two-story brick building 75x100 feet in dimension.

John A. Hayden Slate Co., St. Louis, Mo., has been incorporated with a capital stock of \$10,000.00 to construct slate roofs, etc., by John A. Hayden, Edward Hayden and Isabella G. Hayden.

The McHenry-Millhouse Manufacturing Co., at South Bend, Ind., has been extending the scope of its roofing business by the establishment of a down town office. The company has begun taking contracts to put on roofs as well as to manufacture the material for same.

Henry Hite, John Everett and William Myers, Decatur, Ind., have formed a company to manufacture tile roofing. They are now erecting buildings for their plant and expect to begin work in about 60 days, the manufacture of roofing blocks of cement and sand by a newly invented process.

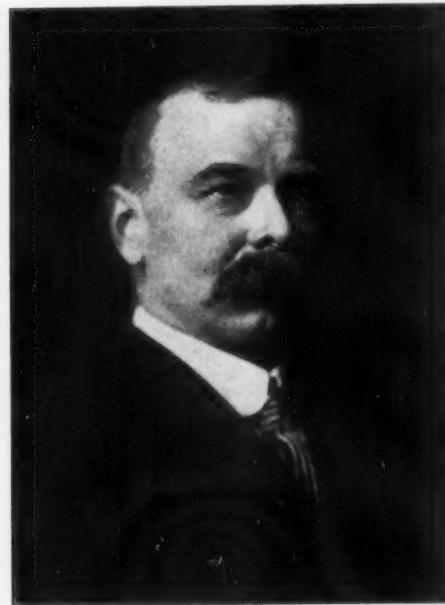
The Furman Construction Co., Detroit, Mich., manufacturers of ornamental tile for roofing and other purposes have removed their plant to 613-619 Fort Street West. The company manufacturers the New Era Cement Tile Machine which makes a cement tile of fine quality and it is said to be as cheap as wooden shingles.

For the second time with a week the establishment of the Vulcanite Roofing Co., 625 Campbell St., Chicago, Ill., has been visited by an extensive fire. The loss caused by the two fires will make in the aggregate \$55,000.00. President Robert Glen- denning, 78 DeKalb Street, declares that some person bent on the ruin of his business is responsible for these fires and all indications point that way.

McMakin & Stephenson, roofers, is the name of a new firm which has just succeeded that of E. S. McMakin, roofer, at 105 S. Jefferson Avenue, Battle Creek, Mich. The senior member of the firm is a practical roofing man of wide experience. Mr. A. L. Stephenson is a business man of the highest qualifications. They already have on hand several important contracts, and will carry a complete stock of roofing supplies.

J. E. Breeze of J. E. Breeze & Bro., states that their business, which probably reflects the roofing situation at Cincinnati, has been unusually good for this time of year, and attributes it to the fact of the very severe winter which has probably damaged many roofs and made necessary repairs, if not a new roof. Cincinnati is strong on composition roofing and all report that much more of this class of roofing is being used each year.

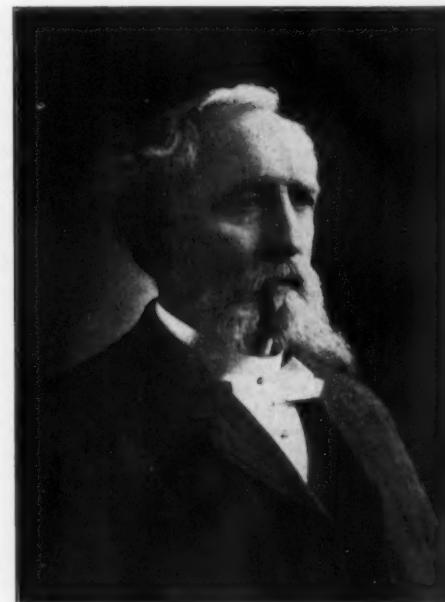
The Union Roofing Co., is operating a paper mill plant at Clinton, Iowa, with a force of 50 hands turning out a high grade of roofing paper, most of which is shipped to St. Paul and Minneapolis and used in the extensive industries of the company in those cities. Wm. McIntosh is the local manager for the St. Paul concern and is a practical paper maker of the highest qualifications. They are shipping an average of four cars per week.



C. B. JAMESON, BUFFALO, N. Y.

tion, gravel, slate and tin and iron roofing. They are practical men and report work for the summer quite good.

H. R. Shaffer & Co., suite 145-301 La Salle Street, is one of the old firms being established in 1867, making a specialty of gravel roofing. They are doing a good business and gravel roofing is not much in favor here. Henry R. Shaffer is president of the company, Abbot L. Baldwin, secretary and treasurer.



COL. M. W. POWELL.

The William Murdock Co., 145 Le Salle Street, is another well-known firm of gravel roofers which has been doing business in Chicago for twenty-four years. They report business fairly good and prospects for the season's work as promising.

The Standard Roofing Co., with offices and yards at 209 Halstead Street, are largely engaged in asphalt and gravel roofing. They report their business fair, but work is not overcrowded just at this time.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually.

CHAS. WARNER	President.
Chas. Warner Co., Wilmington, Del.	
PETER MARTIN	First Vice President.
Western Lime Co., Huntington, Ind.	
O. F. PERRY	Second Vice President.
Rockland-Rockport Lime Co., New York City.	
W. B. HILL	Third Vice President.
Ash Grove Lime Association, Kansas City, Mo.	
C. W. S. COBB	Treasurer.
Glencoe Lime & Cement Co., St. Louis, Mo.	
E. H. DEFEBAUGH	Secretary.
ROCK PRODUCTS, Louisville, Ky.	

Official Organ, ROCK PRODUCTS.

The Detroit Meeting.

Don't forget that the president of the National Lime Manufacturers' Association will meet the manufacturers of hydrated lime in the afternoon of July 11, at the Cadillac Hotel, Detroit. Remember, you are expected to be present and bring your wife with you. The second day will be more of a social session. The party will make arrangements to take a trip up the Detroit River and see one of the greatest rivers in the country, as well as enjoy a fine ride in the "good old summer time." In this way the manufacturers of lime will become better acquainted. If you haven't made your arrangements to get a room at the Hotel Cadillac, you had better write them about it at once. It is one of the best hotels in the United States.

The first session of the convention will be held at 9 o'clock Tuesday morning, and in fact there will be practically a continuous session all that day. The program will consist of a paper by Mr. H. P. Dodge, of Toledo, on "The Application of Gas for Burning Lime," and a number of new wrinkles in the lime business will no doubt be rounded out in Mr. Dodge's paper.

Mr. S. V. Peppel, of Rock Products, will make an address on "The Uses of Lime," and will no doubt add some suggestions for the Department of Publicity.

Mr. H. O. Duerr of Wilmington, Del., will make one of his interesting talks on "The Contract System as Applied to Quarry Work," labor costs and other items, a diagnosis in the cost of getting out stone.

The Question Box will be on hand. If you have any troubles, or if you desire to hear anything discussed that will clear up the atmosphere about your plant and insure more money in your pocket, you should bring them with you, place them in the box and have a free discussion of the same.

This should be the best meeting in the history of the business, and every manufacturer of lime should be on hand. Hydrated lime meeting July 11, National Lime Manufacturers' Association, 12 and 13; the second day will be more of a social session devoted to a trip up the beautiful river on one of the finest ships in the world.

Lime Industry Looks Gloomy.

ATLANTA, GA., June 10.—T. M. Randall, president of the Southern Lime Manufacturing Co., Atlanta, Ga., writes. "The lime trade in this section of the country has been very dull all the year and prices are so low it is hard to make expenses. Unless the manufacturers will come together and raise the price of their products to where they can realize a reasonable profit on their business I do not know what is to become of the industry. I am informed that we have one manufacturer in this section of the country that is selling lime at 20 cents per barrel in bulk, and I have heard of others offering to sell as low as 40 cents in cooperage. At such prices as these the future prospects of the lime industry look very gloomy."

Hydrate Excursion.

The Clyde Iron Works, Duluth, Minn., have been experimenting on a hydrating machine for lime the past six months, and have overcome all mechanical difficulties so far encountered. The machine is completed and ready for the market.

The first machine is in operation at Sugar Ridge, Ohio. It is handling lime for hydration in a way that is surprising to everybody. The manager of the Clyde Iron Works says that in this machine they are able to bring every particle of lime in direct contact to its proportionate share of water, and herein lies the success of the machine. This is done with approximately one-eighth of the power now required to turn out a like quantity, by other machines.

This company would be glad to take a party on a special trolley car for the National Lime Manufacturers' Association convention at Detroit, on any of the three days, July 11, 12 or 13, to give those interested an opportunity to see their method of hydrating lime. The plant in which this machine is working is that of the Urschel Lime Co., at Sugar Ridge, Ohio, located on the Ohio Central railroad, seventeen miles from Toledo. The party can be taken direct to Sugar Ridge and return the same day. It takes less than a half day to make the trip.

The Clyde Iron Works are installing a 2000-pound capacity machine at the Kelly Island Lime and Transport Co.'s plant near Marblehead, Ohio. This will be one of the largest and best constructed plants in the United States.

High Water in Arkansas.

FAYETTEVILLE, ARK., June 18.—The Ozark White Lime Co., reports that trade is very dull and they have no end of trouble by reason of the high water.

Slim Prospects are the Outlook.

FORT BYRON, ILL., June 12.—Mr. H. C. Metzgar, of the Fort Byron Lime Association reports that trade is very dull as compared with last year saying: "We are doing about half as much business and the prospects are slim for the balance of the season."

Lime Made From Oyster Shells.

The Louisiana Lime Co., New Orleans, La., was organized last November and now has its plant about completed and ready to begin operations. They will manufacture lime from oyster shells. Mr. Wm. O. Lombard, who is president of the company says:

"The shells are dumped into a retort where a certain temperature is reached gradually, and when the shells have passed through this retort they are removed to a crusher, where they are ground to a powder almost as fine as flour. After they have passed through this roller the powder is put through a sifter, very fine, thus removing every particle of impurity, after which the lime is treated scientifically, and is really a white cement. It has given perfect satisfaction for brick-laying, plastering, etc., and is rated as the best lime in the market by architects and others. We do not sell the product retail, as it requires the full capacity of our plant to supply the wholesale business."

"There are many houses in the French quarter of the city—the older ones—built with oyster shell lime, as is the gas-house, but the fact that this industry is located right here in the city with an abundance of raw material to work on, is an important one, when we consider that for many years past the oyster shell has been a practical waste."

Mr. J. B. Webb, manager of the Standard Lime Co., Kendrick, Fla., will attend the meeting of the National Lime Manufacturers' Association at Detroit. Speaking of business, this company says it was never better than at present. They have been running full capacity for twelve months and prospects are good for the future.

The Nashville Hydrate of Lime Co. will erect an extensive plant in South Nashville, Tenn., at a cost of \$20,000.00, with an estimated capacity of 150 barrels of hydrated lime per day. It is the only concern of the kind in the South. The officers of the company are: P. G. Breen, Sr., president; Morgan Wilkerson, vice president; and T. J. Ferguson, general manager.

The Glen's Falls Manufacturers.

A brief visit among the lime manufacturers of this point showed that the business is in a very healthy condition there and that they all work in harmony so far as prices are concerned, although the old association was dissolved about a year ago. They have had a very good winter and summer prospects are very good for all of them.

The stone here differs from that used anywhere else perhaps for lime products. It is jet black limestone which takes a good polish and has the name of "black marble." While they get some limestone there, the black is the more desirable of the two for lime purposes. We were told here that this was the only black marble in the country, and so far as we know, this is true. It makes a lime of good quality which runs between 97 and 98 per cent. calcium oxide with almost no magnesia.

This same vein of stone supplies the raw material for the Glens Falls Portland Cement Plant. Aside from the lime business, this marble is worked to some extent for polished slabs for interior decoration, and for this purpose they have no difficulty in getting their own price as there is no competition in that line.

Some of the plants here are using wood for burning lime while others are using coal. The largest producer here is probably the Glen Falls Lime Co., which has also a general supply house for building material. We regretted that Manager J. W. Finch was out of town. This company uses wood for fuel.

At the Sherman Lime Co.'s plant, Mr. Dan Moynihan showed us round. This plant is located along the canal bank and when you approach it, you would not think of it as a lime plant at all. It was built to take advantage of the natural embankment to take the material to the top of the hill and draw it on the lower side.

A little ways from this plant, we had the pleasure of shaking hands with Mr. H. J. Russell, secretary of the F. W. Waite Lime Co., who is also superintendent of the plant. This company put in a new plant within the last few years and have some equipment which we have never seen at a lime plant before. The plant is located beyond the battery of kilns but in line with them. A cable with automatic dump buckets is used for handling the limestone and one man at the engine handles all the stone for four kilns, and could handle for more if they were in line. The cable is similar to those used by slate and granite people for getting rid of their waste except that most of them do not have automatic dumps in the industry mentioned. Some, however, do have them. This was a very neat way of handling it, and it would be very interesting if Mr. Russell would collect data as to the actual cost of handling limestone in this way so that it might be compared with the better known methods of handling this material. Two Keystone kilns were put in to start with, and a little later two more were added. The new kilns were made five feet higher than the old ones. These kilns are considerably higher than the average lime kiln in Ohio and Indiana.

The Kelly Island Lime and Transportation Co., Sandusky, Ohio, report a very satisfactory year's business.

Incendiaries burned the warehouse of the Los Angeles (Cal.) Lime Co. recently containing several hundred barrels of lime.

The Eldred Colorado Lime Co., of New York City, has been incorporated with a capital stock of \$50,000.00. The incorporators are: J. F. Eagle, C. F. Hathowson and H. I. Snyder, of Montclair, New York.

Charles Zellers and William K. Rothenberger, have organized the Riverside Lime Co., at Reading, Pa., and will soon start work on their quarries, which contain what is considered the best limestone in the city.

The Western Lime Co., Huntington, Ind., has made extensive improvements to put their plant in a condition to do a larger business. While building operations were rather slow this spring the market is now quite active.

The St. Louis Lime and Material Co., St. Louis, Mo., incorporated with a capital stock of 50,000.00, will manufacture lime and other building material. The incorporators are: A. H. Craney, Jr., H. L. Block and E. E. Parramore.

ROCK PRODUCTS.

Plaster.

The National Plaster Manufacturers' Association.

Meets Semi-Annually.

H. E. DINGLEY, Syracuse, N. Y., President
 A. H. LAUMAN, Pittsburg, Pa., First Vice President
 L. G. POWELL, Toledo, Ohio, Second Vice President
 JAS. LEENHOUTS, Grand Rapids, Mich., Third Vice President
 ALEXANDER FORRESTER, Cleveland, Ohio, Treasurer
 E. H. DEFEBAUGH, Louisville, Ky., Secretary

Official Organ, ROCK PRODUCTS.

The Plaster Industries of Garbutt.

The little village of Garbutt, Monroe County, N. Y., situated fourteen miles south of Rochester, N. Y., on the line of the Buffalo, Rochester & Pittsburg Railroad, is quite a plaster town. The Lycoming Calcining Co., whose main office is at Williamsport, Pa., operate gypsum mines and a big plaster mill at that point. This corporation has been doing business now for about four years, and has a plant turning out one hundred and twenty-five tons per day. The Gypsum mines are just across Allen's Creek, about 300 ft. from the mill, and the vein averages six or seven feet in height. The company have rock enough to last them over fifty years. That the rock is of good quality, and the plaster of the best grade, is evident from the fact that the Lycoming people have nine wall plaster companies now under contract, and have a twenty-year contract with the Sackett Wall Board Co., of New York, who about two years ago moved their extensive plaster board mill from Staten Island to Garbutt, where they are now manufacturing their wall board entirely from the stucco turned out by the above concern.

The Diamond Wall Cement Co. also have their wall plaster mill at Garbutt, N. Y., making all their product from the same plaster. The cut shown above is a picture taken when the building was nearing completion, and is about one-half its present size; the business having grown to such an extent as to require additional buildings and other extensive improvements to the original

plant. The officers of the company are N. H. Culvert, president and manager, and F. H. McCormick, secretary and treasurer.

Gypsum Deposits in the United States.

The manifold uses to which gypsum is now applied give its production great importance. Ground gypsum serves a valuable purpose in agriculture as land plaster, increasing the fertility of soils. One of the uses with which we could dispense is that as an adulterant of flour and other products. Calcined gypsum may be classified as plaster of Paris and wall plaster. Plaster of Paris is used principally in molding, for forming molds and plaster ornaments, especially such as are used in interiors. The glory of Chicago's White City might have remained an unrealized dream had it not been for the gypsum deposits of the country. The use of plaster of Paris as molds in the manufacture of porcelain is extensive. In the plate-glass industry thousands of tons are required annually for bedding the glass during the process of grinding and polishing. It is also employed as a filler in paper and as a minor constituent of some Portland cements. Some raw gypsum is used as a body for paint. Calcined gypsum prepared with glue and pigments, and sometimes called alabastine, is applied as a thin plaster to walls. The use of gypsum as wall plaster is most extensive, and because of its adaptability it has largely displaced lime and sand mortar as wall finish. To the many people concerned in the manufacture and use of gypsum, Bulletin No. 223, on Gypsum Deposits in the United States, which has just been published by the United States Geological Survey, will be of interest. The bulletin is published for gratuitous distribution.

This report consists of a comprehensive summary of existing knowledge regarding the gypsum deposits of the United States, compiled by Mr. George I. Adams, with the collaboration of seventeen other geologists, who have prepared papers on the deposits of the several States. The geology, technology, and production of gypsum are discussed by Mr. Adams in a preliminary paper. Special attention is given by him and his associates to the economic features of the subject.

The diverse conditions of development of the deposits of different regions are well shown in the papers on the occurrence of Gypsum in the various States. During 1902 gypsum was produced in Michigan, Iowa, Texas, New York, Ohio, Kansas, Oklahoma, California, Wyoming, Colorado, Virginia, Utah, Montana, South Dakota, Nevada and Oregon. The industry is thus seen to well distributed, except in the southeastern part of the United States. An occurrence recently noted in Florida and described in this report may, however, prove to be of economic value.

Largely Increasing Facilities.

WHEELING, W. Va., June 7.—The Wheeling Wall Plaster Co. write, "We have added to our facilities one large, new ware room, a new stable, and are now getting up plans to have a three-room office building erected of concrete blocks under the American Hydraulic Stone Co.'s system of two-piece construction. Business is fine and the outlook is excellent."

New Officers Elected.

BRADDOCK, Pa., June 24.—At a meeting of the Consumers Gypsum Co., held at their offices in Port Clinton, Ohio, on June 14, 1904, the following officers were elected to serve for the ensuing year:

President, W. M. Holmes; vice president, John W. Elcessor; secretary, L. G. Powell; treasurer, O. F. Ferriman; directors, W. M. Holmes and John W. Elcessor, Braddock, Pa.; Orrin G. Ferriman and Elson J. Forrester, Cleveland, Ohio; L. E. Fishack and L. G. Powell, Toledo, Ohio; Nelson J. Ruggles and Edward T. Bingham, Columbus, Ohio.

The company is making some changes in their grinding department, and hope to get their plant running to its full capacity in a very short time.

Ready for Business Better Than Ever.

GIHONBURG, OHIO, June 27.—A. H. Lauman, president of the Standard Lime Co., writes, "Since our plant burned out last September we have done no business in manufacturing our rock wall finish until May 15. The plant has been rebuilt with double the former capacity for manufacturing rock wall finish under the A. H. Lauman patent, that is, under steam pressure maintained all the time. Since starting up again under a new improved method of our own we claim to have the best rock material on the market as the process maintains all the ingredients that is in lime and nothing escapes from it during the work process. We are ready to do business at the old stand by the same people, and invite our former customers and friends to write us."

Plaster Business Never Better.

The Lycoming Calcining Co., manufacturers of land and calcining plasters with offices at No. 752 W. Fourth Street, Williamsport, Pa., are having a splendid run of orders. Elsewhere on this page is a view of their plant near Williamsport, which was taken when the plant was nearing completion, since which time several additions have been added to the building which alters the appearance somewhat. Mr. N. H. Culver, president of the company says: "We can say that the plaster business with us was never better. This May was the biggest month in our business for over four years, and the indications are that when all the returns are in upon the June transactions that the month will show up even better than for May."

The Oakfield Plaster Co., Oakfield, N. Y., have sold their plant to the United States Gypsum Co.

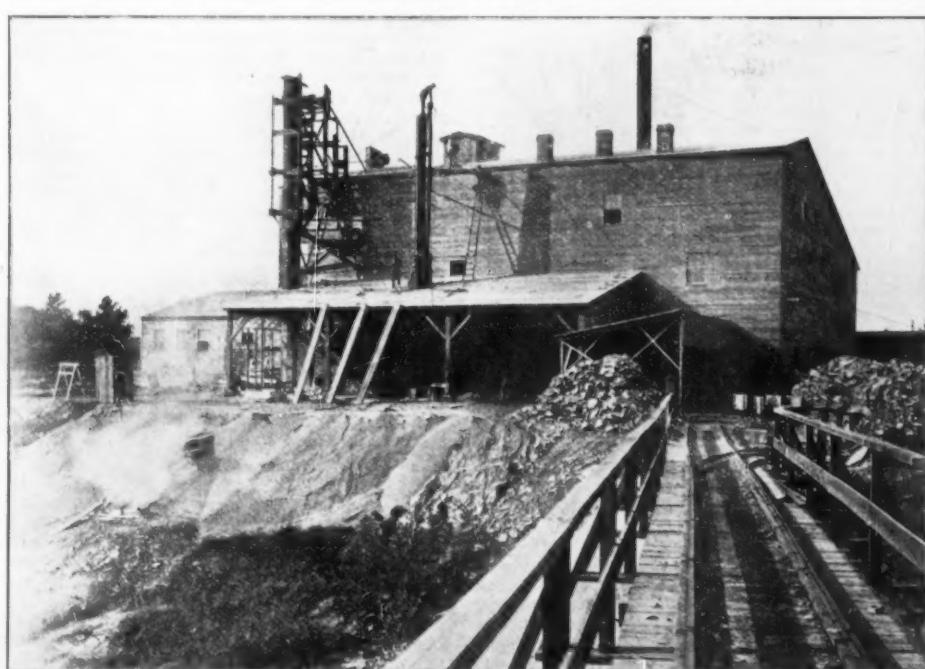
Mr. E. C. McCausland, superintendent of the United States Gypsum Co.'s mill at Sandusky, Ohio, has closed down the plant owing to a shortage in the dry sand supply.

The Binghamton Pulp Plaster Co., Binghamton, N. Y., has been incorporated with a capital stock of \$50,000.00. The directors are: W. H. Lockwood, H. W. Edson and F. H. Matthews.

The International Gypsum Co., of New York City, has been incorporated with a capital stock of \$500,000.00. The directors are: G. T. Morse, Samuel Tebbutt and Austin Brainard, of New York City.

There is a movement on foot at Abilene, Texas, backed substantially by local capitalists to establish a plaster of Paris and cement factory in Fisher County, the principal office of which will be in Abilene, and they will work the extensive gypsum deposits in the immediate neighborhood.

The American Hard Wall Finishing Co., Knoxville, Tenn., has been incorporated by local capitalists for the purpose of manufacturing wood fiber plaster and wall finish. Work has been begun on the foundation of the company's plant and the promoters of the enterprise hope to be turning out samples of the product of the plant by July 15.



PLANT OF LYCOMING CALCINING CO., WILLIAMSPORT, PA.

Our Traders.

The Way Things Seem to a Newspaper
Man When He is Out Among the Trade.

BUFFALO, N. Y.

A brief visit to the people who supply the building materials for Buffalo elicited the information that there was plenty of work to be done in Buffalo if labor matters were at all settled. During the last month or six weeks there have been strikes of masons, bricklayers and other labor interested in the building line.

We found the George W. Maltby Co. hard at work getting out the stone for a handsome residence at Uniontown, Pa.

W. S. Humbert was all smiles when we came in, not because he was so glad to see us, but because he had just received an inquiry for a price on 10,000 barrels of cement. His new warehouse out at Niagara Falls, which was built during the severe weather last winter is practically complete, and we hope to show a picture of it in the near future and give some details as to its construction.

M. A. Reeb combines pleasure with business and keeps his automobile on the go in his rounds to jolly up the foremen of his various interests. We regret we did not get to see him because there is something catching in that laugh of his which is always ready to come out.

ROCHESTER, N. Y.

There is probably more activity in the builders' supply line in Rochester to-day than in any other city in the United States owing to the rapid rebuilding of the properties destroyed by the fire last Fall.

In the yard of Lauer & Hagaman everything was active, and the yard was in the main filled with brown sandstone which had been imported from Scotland and is to go into the Stein-Bloch building on St. Paul Street. This is an enormous structure, and must be an expensive one, otherwise the stone would not have been imported from Scotland.

The Rochester Lime Co. have started to build another kiln of the same general type as the one previously mentioned.

James M. Hamilton, of the Rochester Lime Co., is no doubt a very good salesman since he placed for his firm a contract for all the Akron cement, all the Alpha Portland cement and all the lime which is to be used in the Granite Building and the Sibley Building, which is to take in the space from Sibley Street to North Street, but we feel sure that he will tie his bonnet on before he starts to the Detroit meeting of the National Lime Association. When you see him there just ask him about that new hat which his wife made him buy before he started to the Pittsburg meeting.

A visit to the place of Thomas Oliver, dealer in masons' materials, would indicate that there was a great deal of activity there also. This firm sells a great deal of cement for sidewalk purposes.

BELLEFONTE, OHIO.

We had the pleasure of calling on Charles F. O'Donnell, Virginia manager of the Buckeye Portland Cement Co., and we found that he was still remodeling that plant of his. Nearly everything was ready to go ahead again, but only three rotaries are running now.

The Union Portland Cement Co., over at Rushsylvania, has been entirely remodeled and enlarged by adding two rotaries and the necessary equipment to go with it. There is an entirely new organization there now, with new management. Manager Ballinger is the right hand man for William Andrews and feeling first rate, and had just made a trial start of part of the machinery, and there is no doubt that by this time it is in full operation.

SANDUSKY, OHIO.

Kelly Island Lime and Transport Co. have recently added ten kilns to replace the four burned out at Lakeside. The new kilns are on the site of the old plant.

At the Sandusky we found manager Fred Olemacher scrapping around after cement orders. He reported that it did not require all of their kilns at that point to be operated at present to supply the demand.

The Winters Gypsum Co. are putting down two new shafts on their gypsum property at Southside and have put in several steam drills.

It was reported that both companies operating at Fletcherville have had unusual trouble with the water breaking into their mines.

C. C. Winters is exploiting a new automobile slurry feeder. They have been in use for some time at the Castalia Portland cement plant, and so far as we are able to learn they are satisfactory. It consists of an enclosed cylinder drum with a hopper at the top which is fed and driven by a chain and sprocket arrangement. The device consists of a cylindrical drum in which buckets revolve pressing against the circumference of the drum, thus being concealed except at the point where it passes under the hopper and at the point of delivery. In this way the bucket is always filled clear full and empties completely on the under side. The rate of feed is regulated then by the speed at which these buckets travel.

ELYRIA, OHIO.

Manager Griswold, of the Elyria Wood Plaster Co., who has moved his office to Elyria, says their new plant at Elyria, which has a capacity of 30 tons in ten hours, will be running by the first of July, and will be operated in connection with the other plants. He also stated that all the other plants were running at full capacity at the present time.

The Elyria Gas Engine Co., Herman Ely, president; A. E. Taylor, manager; is building a new plant on the West side which they expect to occupy within thirty days, turning out gas engines from 10 to 60 h. p.

At the Elyria Machine Co.'s plant Mr. Shuart showed us a wood fiber machine which seems to have considerable promise, the manager claiming that the automatic devices attached are bound to turn out a more uniform fiber than any other machine on the market.

EDITORIAL CHAT.

What do you think a man told a Rock Products' representative recently? That our advertising rates were more proportionately than some papers covering part of our field, but old in years and full of advertisements. This brilliant argument was produced to get us to cut the price. We sold the man in each case at our price. Do you know why? It is no secret, so we will tell you; because in each instance the buyer of publicity had been honest enough to tell us that his customers, his competitor and his traveling man, each had recommended Rock Products, and he wanted to be recommended therein.

Perchance there may be others of the same mind, that is why we tell this tale. Our shop is on the first floor, 431 Main Street, Louisville, Ky.

If your wife goes into a dry goods store and wants a spool of thread or a parlor carpet or a dish washer, there is only one price. If you want a pair of socks or a gold watch, the merchant makes the price. Why then should a craft like the builders' supply lines bow down on humble knee and have to make three or four prices before they get an order for stone or brick or cement? It is true a man don't discount on a 25 per cent. contract like he would on a ten thousand dollar job, but the lack of organization, or lack of broadgauge brotherly business feeling has put you at the mercy of the customer, and he has been making the price.

Wouldn't it be pretty good business for you to get acquainted with your competitor, even if you have to get on the cars and go to see him? You may have to go and see him two or three times. Be frank with him and he may meet you more than half way, but treat him kindly, don't betray his confidence. We have known fellows of that kind, but they are not broadgauge business. What we are trying to get at is, education into broadgauge methods which means more profit and more satisfaction in your business; and don't forget it, you can't get this education or these better methods without reading the trade papers. They are the educator, as it has been said of the printing press, that it is the forerunner of civilization.

PERSONAL.

Capt. C. A. Bond, of Barre, Vt., has sold his interest in the granite business to D. M. Miles of the same city, for \$20,000.00.

Will Katterjohn and Pat Holloran, of Paducah, are now preparing to install an exhaustive air compressor in their big quarries at Cedar Bluff, near Princeton, which will double their capacity.

L. M. Wing, president of the Wolverine Portland Cement Co., of Coldwater, Mich., and Quincy, Mich., was one of the delegates to the Republican National Convention recently held at Chicago, Ill.

Mr. Allen Cosgrove, advertising manager of the National Drill and Manufacturing Co., of the Pullman Building, Chicago, Ill., had the misfortune to strain his knee while horse back riding recently and is just able to be about again.

The Union Granite & Co-operative Co., of N. C., have leased several quarries around Elberton, Ga., and are installing large plants. Cincinnati, Chicago, and St. Louis parties will place contracts at this quarry as soon as same is in operation. The company is managed by Mrs. M. L. Wyatte.

Augustus N. Eddy, president of the Imperial Expanded Metal Co., and the Imperial Fireproofing Co., 1538 Monadnock Building, Chicago, Ill., has sailed for Europe both in the interests of business and for pleasure. On his journey he will visit his son, Spencer Eddy, secretary of the United States Legation at St. Petersburg, Russia.

The W. H. Evers Engineering Co., 237 The Arcade, Cleveland, Ohio, have had a good business this spring and have several good orders on hand. They are making plans for a water works system for Cleveland Heights Village and are placing sewers in twelve streets in Lakewood and seven in South Brooklyn, both suburbs of Cleveland, which work is now well under way.

Charles W. Gindele Co., general contractors and builders, 3333 La Salle Street, Chicago, Ill., report business as fairly good. They have four postoffice jobs on hand at the present time, Boone, Iowa; Kalamazoo, Mich.; Lincoln, Neb.; Baaboo, Wis.; also, the Chicago & Northwestern Railroad, station at Appleton Junction, Wis., as well as the Warner Sugar Refining Co., at Waukegan, Wis.

Michael Finkler, eighty-four old and a pioneer in the salt industry at Syracuse, N. Y., died at his home in that city June 8, leaving four sons, four daughter, nineteen grandchildren and seven great-grandchildren. Mr. Finkler came to this country from Germany in 1842 from the County of Braun Sairer and the village of Klio St. Winter. He made his home at Liverpool, five miles north of here and the center of the salt industry and worked at the salt business thirty-seven years.

Edward C. Morrison, of Gouverneur, N. Y., a well-known marble man with extensive quarry interests, and who has been identified with the industry nearly all his life died at the age of 41 years. He was vice president of the White Crystal Marble Co., being associated with Messrs. C. A. and D. E. Lux, of Clyde, N. Y. Mr. Morrison has had the personal supervision of the quarrying operations and his death was a result of overwork upon a large contract which overtaxed his energy.

C. E. Tayntor Co., Augusta, Me., well-known operators in the monumental granite trade complete an expansion of their business by engaging in the general building contract work. They have an inexhaustible supply of very fine stone and intend in the near future to erect a shed of sufficient size to accommodate 100 men and in such a location that it may be extended in a straight line with a capacity for 1,000 men. They have asked a concession of taxation of the city authority and made their extensive improvements contingent to the final decision of the city government.

M. W. Catchings, treasurer of the Pennsylvania Structural Slate Co., Easton, Pa., informs us that the structural slate business in 1903 was 50 per cent. better than it was the previous year, and that the present indications are that 1904 will far exceed the business of the past year. In addition to their structural slate business, he writes us that they have shipped over 200,000 square feet of blackboard slate during the past year, and expect to ship 300,000 feet of it this year if they can make them.

Cement.

Concrete Construction in New Orleans.

Perhaps there is no industry in the United States which shows such phenomenal growth as that of the manufacture of Portland cement. Prior to 1880, the United States, according to the Directory of American Cement Industries, manufactured 82,000 barrels; in 1890, 335,000 barrels, in 1900, 8,482,020; in 1903, 20,700,000 barrels. During this period sixty-three companies were formed. Several companies operate more than one plant, and two have them located in more than one State.

The purposes for which Portland cement is used are multifarious, to wit: Office buildings, union stations, churches, hotels, residences, concrete work, sidewalks for towns and cities, railroad cross ties, telegraph poles, river and sea piling and many other uses.

Perhaps the most notable instances of cement construction are the National Gallery of History and Arts, of Washington, D. C., now being used at a cost several million dollars; the fifteen-story Ingalls office building, in Cincinnati, the mammoth Nassau-Beekman building, New York, and the Royal Bank of Canada in Havana, Cuba. But the most wonderful of all is the Pantheon at Rome, built in the year 27 B. C. and after a lapse of 1931 years not showing a single crack.

The art of manufacturing Portland cement was known to the ancients, but for many centuries was

a lost art, until revived in England some eighty years ago. The term Portland was applied to the product from the fact that it resembled in appearance a stone quarried at Portland, England, known as the Portland stone.

Portland cement will be a boon to the city of New Orleans, enabling superb and massive buildings to be erected on solid foundations, as they are in Holland, where they have a soil similar to our own, and drive armored concrete piles, weighing 7,000 to 8,000 pounds, to a depth of sixty or seventy feet.

It is gratifying to know that some of the architects of New Orleans are much interested in the matter of cement construction. Plans for buildings in some cases are already drawn, doubtless many more will follow, adding to the beauty and attractiveness of the city.—*Picayune*.

Cement Plant a Probability.

SUMMITVILLE, TENN., June 11.—F. B. Shirley, Summitville, Tenn., writes, "Several parties from the North and West have been prospecting with a view to purchasing property owned by our company for a location of a Portland cement plant here. Tests have shown an inexhaustible supply of stone, shales, clays, etc., with water power, gas, coal within 15 miles of the place."

The Glen Falls Portland Cement Co., Glen Falls, N. Y., have opened operations with 400 men. This mill has been idle since December.

The American Portland Cement Co., of Kansas City, Mo., with a capital stock of \$10,000,000, has been incorporated by: C. A. Brockett, Howard McCutcheon, P. R. Jordan and R. M. Brockett.

The United States Portland Cement Co., has been organized with a capital stock of \$500,000,000. The company will have its principal offices at Indianapolis and its works and factory at Bedford. The directors are: Elbert Walker Shirke, Emanuel I. Fisher, Frank M. Talbot, Abraham Lehman and Vanton O. Foulk.

A company has been organized at Jonesville, Mich., to manufacture cement monuments, which promises to be an important industry.

The Pennsylvania Portland Cement Co., of New Castle, Pa., has notified the State Department of the increase of capital stock from \$100,000.00 to \$1,000,000.00.

The Western States Portland Cement Co., Independence, Kan., is putting up a big plant at that place. Indications are that the plant will be ready to start up within a year. Natural gas will be used as fuel.

The Edison Portland Cement Co., Philadelphia, Pa., expects to put in two new roasters which will double the capacity of their plant. It is stated that a sufficient amount of orders are in hand to increase the operations for many months.

The Great Northern Portland Cement Co., which is building an enormous plant at Marlboro, Mich., a town founded by the concern and built up within the past sixteen months along substantial lines is now running with a capacity of 4,000 barrels a day. When completed the plant will represent an investment of fully \$3,000,000.00, and the final capacity of the operations is as yet a matter of conjecture.

The Sandusky Portland Cement Co. has declared 6 per cent. dividends on both preferred and common stock for the year 1904. In spite of the depressed condition of the cement industry throughout the country, the output of both factories of this company is sold for more than six weeks in advance. It is especially in dull times that a reputation for fair dealing and a uniform and high-grade product is of advantage to manufacturers.

The Columbia Portland Cement and Marl Co., Madison, Wis., has been incorporated with a capital stock of \$30,000.00, by John C. Prien, Wm. H. Williams, C. A. Van Velzer, C. C. Wayland, Enoch Vernon, John Waterman and F. H. Merrill. From the marl beds controlled by the company it is estimated that a run of fifty years could be made continuously turning out 1,000 barrels per day. It is probable that a Portland cement plant will be erected at an early date.

Wm. H. Lindwurm, Jr., of Milwaukee, Wis., Lawrence Fardy, Sr., of Eagle, Wis., have discovered that a swamp and lake in the town of Eagle contains a very fine quality of lime marl, which forms the chief ingredient out of which Portland cement is manufactured. The discovery is not alone valuable for the quality of the marl, which is said to be equaled only by that found in Germany, but for the quantity as well, as there are many million barrels of the material.

The Iola Portland Lime and Cement Co., of Texas, located at Dallas, Texas, have expended \$125,000.00 in improvements of its plant so as to increase the capacity to 1,000 barrels a day, making the plant one of the largest of its kind in the South. Mr. F. W. Freeborn, superintendent of the company state they have set all the machinery at the works in motion in order to make a test and he states that it works to perfect satisfaction and he confidently expects to be ready to begin operations in earnest by the middle of July.

The largest cement contract ever awarded was given to the American Cement Co., whose big plant is located at Egypt, Pa., Wednesday for its Giant cement, to be used in connection with the Pennsylvania railroad's tunnels under the North and East Rivers and the Borough of Manhattan. The largest previous cement contract was to the same company for use in New York subway. While the amount of cement contracted for is not stated, some idea of the quantity can be gained from engineer's estimate that the North River tunnels will require 393,000 cubic yards of concrete and the East River tunnels 2,300,000 cubic yards.

The Edison Portland Cement Co., Stewartsville, N. J., has greatly enlarged the plant at New Village since last December, and it now has a capacity of 5,000 barrels a day. With the enlargement of the Edison plant and the prospect of the Freid Engineering Co., of Orange, building a mill and factory at Stewartsville, the village is having a boom, for the Edison company have started running at full blast with their new crushers. Besides manufacturing cement, the Freid company will also make cement bricks, blocks, etc., so that it will be an easy matter to construct brick walls, buildings, etc. Colvin Freid, of Orange, is at the head of the company.

Imports of Portland, Roman and Other Hydraulic Cements.

MONTH OF APRIL, 1903			10 MONTHS ENDING APRIL, 1903		
COUNTRY	BBLS. 380	VALUE	BBLS. 380	VALUE	
United Kingdom.....	112,000	\$ 343 00	39,881,899	\$ 130,268 00	
Belgium.....	27,723,607	84,479 00	294,634,970	865,046 00	
France.....	306,400	1,122 00	5,270,787	21,795 00	
Germany.....	57,930,644	185,658 00	569,372,939	1,861,958 00	
Other Europe.....	1,052,436	2,939 00	7,752,482	22,507 00	
British N. America.....	70,600	330 00	1,216,066	6,873 00	
Other Countries.....	800	4 00	1,426,200	5,884 00	
Totals.....	87,196,487	\$274,875 00	919,555,343	\$2,914,013 00	

EXPORTS.

April, 1903.....	20,937 barrels, value \$ 29,090 00
Ten months ending April, 1903.....	216,868 barrels, value 332,880 00

Imports of Portland, Roman and Other Hydraulic Cements.

MONTH OF APRIL, 1904			10 MONTHS ENDING APRIL, 1904		
COUNTRY	BBLS. 380	VALUE	BBLS. 380	VALUE	
United Kingdom.....	2,576	\$ 126 00	43,909,048	\$ 139,761 00	
Belgium.....	6,810,988	19,436 00	171,827,426	517,640 00	
France.....	3,855,152	10,603 00	10,419,692	35,539 00	
Germany.....	29,944,573	96,943 00	326,887,018	1,112,244 00	
Other Europe.....	422,460	940 00	5,321,352	14,590 00	
British N. America.....	.....	.....	890,515	4,162 00
Other Countries.....	.....	.....	3,265,148	13,275 00
Totals.....	41,035,749	\$128,048 00	562,520,199	\$1,837,211 00	

EXPORTS.

April, 1904.....	30,736 barrels, value \$ 41,075 00
Ten months ending April, 1904.....	249,316 barrels, value 372,474 00

Imports decreased in April, 1904, as compared with April, 1903, 46,160,738 pounds, valued at \$146,827.00; and, for the ten months ending April, 1904, as compared with same ten months previous to April, 1903, 347,035,114 pounds, valued at \$1,077,802.00.
Exports increased in April, 1904, as compared with April, 1903, 9,799 barrels, valued at \$11,985.00; and for the ten months ending April, 1904, as compared with the same ten months previous to April, 1903, 32,448 barrels, valued at \$39,594.00.

CEMENT CONSTRUCTION.

(Continued from Page 1.)

Process and Detail of Manufacture.

The "Dry Process" is used in a manner distinctly "American," and by which the American factories are now producing Portland cement in enormous quantities, and of a quality that exceeds European cement in all respects.

From the quarry crusher house the rock and clay are taken by an aerial tramway into the mill building and directly to two revolving dryers. The dried material is stored in great storage bins, from which, as required, it is automatically drawn and delivered by elevator, conveyors and automatic feeders to ball mills. By elevator and conveyors, the partially pulverized material then goes to an immense storage and equalizing bin, from which it is drawn by automatic machinery and conveyed to the raw tube mills, which reduce it to a very fine powder that flows continuously by elevator and conveyors into the large feed bins above the kilns.

Rotary kilns receive this dry powder from mechanical feeders and produce the cement clinker by means of heat maintained day and night at a temperature of about 3,000 degrees Fahrenheit, using pulverized coal blown in by air-pressure fans.

Automatic machinery cools the clinker which is mechanically stored by conveying machinery. From the clinker storage bins conveyors take the cold clinker to ball mills, fed automatically, and the partially pulverized clinker is then elevated to a storage bin over the cement tube mills which finally pulverize it to the required fineness for Portland cement.

Every Package is Guaranteed.

"Chicago AA" Portland cement is guaranteed:

1. Uniform in color.
2. Sound and reliable, passing all reasonable tests, such as the hot test and cold water test.
3. Strength satisfactory and increasing steadily with age.
4. Fineness—95 per cent. to pass 100-mesh United States standard sieve.

Early Troubles of the Company.

The present enterprise is the outgrowth of a factory established at Hawthorne just outside of Chicago some years ago. At that plant there was produced from limestone and clay a Portland cement of superior quality, and which was promptly recognized and accepted as such by the architects, engineers and contractors of Chicago and vicinity and used in many important constructions. In February, 1898, the Hawthorne plant was completely destroyed by fire, just as extensive improvements, largely increasing its capacity.

The company has recently issued a neat little booklet giving many interesting illustrations, and a description of the Thebes bridge across the Mississippi, now in course of construction, by the Southern Illinois and Missouri Bridge Co., under the direction of Noble & Modjeski, engineers, of Chicago. Also a number of testimonials and practical tests which are really worthy of perusal by all parties interested in cement construction, all indicating the high quality of the product of the Chicago Portland Cement Co.

QUARTERLY MEETING.

Association of Portland Cement Manufacturers.

ATLANTIC CITY, June 15.—The quarterly meeting of the Association of Portland Cement Manufacturers held June 13, 14 and 15 at Atlantic City, N. J., with headquarters at Hotel Brighton, was one of the best in point of attendance and value of information disseminated, which the association has ever held. Practically every mill in the association was represented by one or more members.

The first day was devoted mainly to routine business; the second to the reading and discussion of various papers.

The officers: President, J. B. Lober, Philadelphia, Pa.; secretary, E. F. Gerstell, Easton, Pa.;

bodies. Since there was some difference of opinion among the manufacturers on these points. However the differences of opinion varied on both sides of the limits fixed, so it was concluded that in a general way the specifications as set forth met with the approval of at least the majority of the manufacturers.

Wednesday, June 15 morning session, which was called at 10 a. m., was consumed with two interesting and valuable papers, one by H. S. Speckman, of Philadelphia, Pa., on "Fuel Consumption in Rotary Kilns," and a paper by Mr. Richard K. Mead, of Easton, Pa., upon "The Change Which Takes Place in the Clinkering of Lehigh Valley Cement Rock."

In the afternoon session which was called to order at 2:30 p. m., Mr. Clifford Richardson, of Brooklyn, N. Y., read his paper on the "Constitution of Portland Cement as Revealed by Microscopic Study of Clinkers and of Clinkers Prepared by Fuel Materials."

Abstract of Paper—Richard K. Mead, Chemist, The Dexter Portland Cement Company.

Samples were taken at three different times of the raw material going into the kiln and of the resulting clinker, and of the coal used for burning. These samples were then very carefully analyzed; the analyses including determinations of many constituents, not ordinarily determined in commercial work.

The composition the clinker should have, was then calculated from the analysis of the raw material, taking into consideration no losses except those of water, carbon dioxide, and the organic matter of the rock. These results were then compared with those actually obtained by analysis of the clinker, and from this comparison the following conclusions were drawn:

That a large proportion of the sulphur present in the rock as iron sulphide, is lost during the burning, and hence none of the sulphur of the coal for cement burning may be neglected, as not influencing the sulphate found in the clinker to any appreciable extent. That the alkalies, potash and soda, present in the rock are to some extent driven off during the burning. That this loss in the case of soda amounted, in the experiments given, to about 20 per cent., and that of potash to 40-50 per cent. of the quantity present in the raw material. There seemed to be no losses of titanium, phosphorus, or manganese. That about half the coal ash contaminated the clinker; the rest being carried up the chimney by the strong draft.

It was also possible to calculate from the analyses of the raw materials after taking into consideration the losses which occurred, the quantity of raw material necessary to produce a barrel of cement, and it was estimated that 580 pounds of dry rock should produce a barrel (380 pounds) of clinker, or 556 pounds of rock a barrel of cement, to which had been added the usual 2 per cent. gypsum, and which had been seasoned sufficiently to absorb 2 per cent. water and carbonic acid from the air.

Discussion of Richard K. Mead's Paper.

Chas. A. Matcham: Was all of the raw material for the experiments from Lehigh Valley rock, and did you figure what percentage of lime is needed in the raw mixture to react with the silica in the ash?

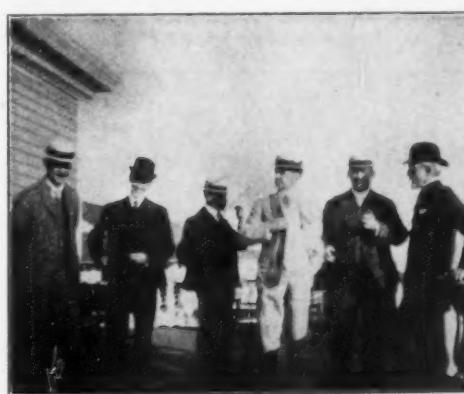
Mr. Mead: The rock used was all from Lehigh Valley and no additional lime was added to cover the silica in the ash. The raw material was ground so that 97 per cent. passed through a hundred-mesh screen. The analysis of the flue dust in every case showed a very high sulphur.

Mr. Harding: What percentage of alkalies in the raw material will affect the boiling test, provided the material is ground fine enough, that is, would it be possible to grind fine enough so as to eliminate the deleterious effect of very high alkalies?

Mr. Mead: I have no data or knowledge in possession which would make it safe for me to express an opinion as to what are the limits in the alkalies which would affect the boiling test.

Mr. A. F. Gerstell: In what manner is the ash from the coal taken up by the cement? Does it remain there as a mechanical mixture adhering to the clinker, or does it enter with the lime or cement and form a constituent chemical element of the cement?

Several answers and opinions were expressed with reference to this point by Mr. Mead and others, and the opinion seemed to be very general



Hamilton, Warner, Dunn, Hagar, Stapleton, Laber, on the Steel Pier.

assistant secretary *pro tem*, Harry Warner, Philadelphia, Pa., were all on hand, and meetings called promptly.

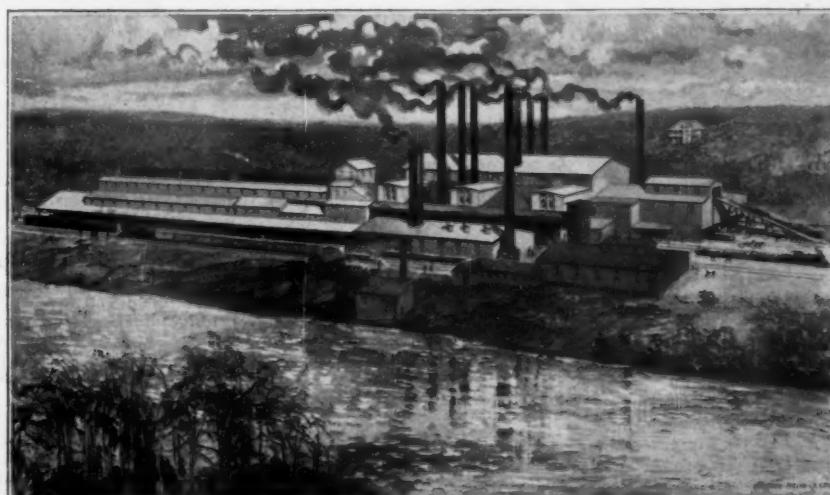
The following program was carried out:

Monday, June 13, 8 p. m., meeting of executive committee.

Tuesday, June 14, 10 a. m.—General meeting of the association. This session was devoted mainly to routine matters, such as roll call, reading of minutes, reports of officers and committees and new business.

The main problem discussed under the latter head was the standard specifications for the testing of Portland cement, as prepared by Committee C of the American Society for Testing Materials, and the methods of testing, as proposed by the Committee on Uniform Tests of Cements, of the American Society of Civil Engineers.

There was considerable discussion as to the justice and desirability of the limits fixed by these



PLANT OF MARQUETTE CEMENT MANUFACTURING CO., LASALLE, ILL.

ROCK PRODUCTS.

that when the velocity of the ash particles was stopped, and they dropped down among the cement and were probably in some cases, at least, uncombined with the lime. Yet, the experience of some other able men shows that when using coal high in ash, they could safely carry a high percentage of lime in their raw material. Several who have used oil and later introduced coal, found that it was necessary to add even as high as 4 per cent. of calcium oxide in the raw mixture to produce cement of the same composition as that produced when using oil.

It is probable that a portion of the ash remains there as a mechanical mixture and that one portion is combined with the lime and cement, and another portion, which seems to be about one-half of the ash present, goes up the flue as flue dust; so that in almost every case it would be necessary to use more lime when using coal high in ash, or when conditions are such that more coal than usual was used. For instance, a raw mixture for the production of cement, by the wet process should probably be higher in calcium oxide than the raw mixture when the dry process is used, on account of the much higher fuel consumption in the former case.

Mr. R. W. Leslie: It is probable that the potash and soda form fusible silicates first, and are then volatilized. This phase in the manufacture of Portland cement was discussed years ago.

The question of the behavior of sulphur in the dome kiln was brought up, and it was said that the sulphur was usually condensed in the upper part of the kiln, and that by the use of an auxiliary flame high up, thus producing double combustion, that most of the sulphur was disposed of.

Mr. Robinson suggested that the difference in conditions between the rotary kiln and the dome kiln would be materially due to the kind of flame produced, whether it was oxidizing or reducing. Mr. Robinson was also a supporter of the idea that the ash adheres to the clinker and is not combined in the cement, while Mr. Matcham brought forth evidence to show that it was necessary and desirable to carry a slightly higher percentage of lime in the raw mixture when coal was burned instead of oil, or something that did not produce ash. Mr. S. B. Newberry was also of the opinion that a little lime ought to be added to take care of the ash. Mr. Matcham said further along the same line that running the same mixture with coal as a fuel, as they had run with one burning oil, they found the silica high every time with the coal-burned cement, and therefore added more lime.

The next question brought up was what weight of raw material was necessary to produce a barrel (380 pounds) of clinker. The calculated amount was 580 pounds of raw material. Probably this is the weight of the dry raw material. The figures giv-



Woodruff, Griffith, Stapleton, Warner, Brobst on the board walk.

en by the various manufacturers vary all the way from 580 to 640 pounds of raw material per barrel of cement produced. The majority however, ranged around 600 and 610 pounds. It is only natural that there should be some variation, due to the va-



Car, Robinson, Matcham, Martin on the board walk.

riation of amount of organic matter contained in the various raw materials.

The next question was the amount of loss during the grinding of the clinker. The data on this point did not seem to be very definite. As nearly as we would be able to judge from the discussion,

we would say that it ranged from $\frac{1}{2}$ of 1 per cent. to $\frac{1}{2}$ per cent.

Mr. Newberry: The paper which has just been presented was very valuable to us and represented a kind of work which we want done. We want definite and reliable information which shows exact conditions on points in the manufacture of cement. Every Portland cement manufacturer can do his share toward throwing light on the entire process, by taking up some particular point or condition, and have it worked out. Everything seems to go the cement man's way. The laws of nature seem to have taken care of him since the alkalies, if high, would be dangerous, but when they go up the stack they do no harm. The sulphur and coal ash present in a large measure travel the same course, while if the lime is in excess, with proper aging recarbonizing takes place, or if sulphides are present they can be oxidized.

The proper proportions of the constituents is a very important matter. The paper just presented shows three typical analyses, all of them very dissimilar; there is a certain proportion of lime which is just right, and any variation, on either side, will give poorer results, depending on the amount of this variation.

The theory requires very fine grinding. If the lime is kept up to the limit, it is absolutely necessary that very fine grinding of the raw material be had. Mr. Newberry considers the best lime factor to work to as being 2.7. Mr. Newberry also called attention to the fact that in the use of marl where the fuel consumption is high, that with the wet process the same raw mixture would show calcium oxide about 2 per cent. higher than that in the same mixture when dried by external heat and burned to clinker.

Mr. Clifford Richardson expressed the opinion that the ash particles merely adhered to the clinker and did not form Portland cement. The ordinary analysis does not differentiate, but simply shows the presence of the excess of silica, whether combined or uncombined.

Fuel Consumption and Production of the Rotary Kiln.

BY HENRY S. SPACKMAN.

Mr. Spackman prefaced his paper by stating that he was presenting this paper in the hope that it might lead to something being done by the society along this line, with a view to determining the relative efficiency of the various kinds of kilns. Since the range in size in the kilns varies considerably, there was some difference of opinion among the manufacturers as to what was the most economical and desirable. The introduction of coal or powdered fuel introduced such a large economy for Portland cement manufacturers that no attention whatever was paid to the fuel economy of the rotary kiln in the beginning, but the time is now here, with the present prevailing prices of cement, in which every economy in manufacture, no matter how small, must be looked to well, and the time is ripe when much experimental work could be carried out to the advantage of everybody concerned. The low prices makes it necessary, and since the demand on the out-put of the kilns is not large, every manufacturer would now have time and machinery available to carry out any experiments he saw fit, and keep track of everything down to the most minute detail, thus furnishing valuable comparative data which would be the means of benefit to all.

Mr. Spackman gave some data as to the output of different kilns and fuel consumption. One kiln 6x60 produces 256 barrels in 24 hours with a fuel consumption of 89.1 pounds of coal per barrel. He gave as the average for the dry process, a production of 225 barrels in 24 hours, run with an average fuel consumption of about 100 pounds of coal, the larger kilns all showing reduced fuel consumption as the sizes of the kilns increased.

The increased fineness in the grinding of the raw material not only added to the value of the cement, but showed slightly lower fuel consumption.

Producer gas has been used and is now successfully operating in France, but in this country has been abandoned in almost every case where tried. A test of a producer on a kiln 5x60, using marl and clay, and producing 120 barrels in 24 hours showed a fuel consumption of 127 pounds of coal. Mr. Hackett, of Pittsburgh, says however, that 127 pounds is a mistake and that 227 is the correct figure.

Mr. R. W. Leslie called attention to what ought to be done by the associations or the individuals of different firms along the line of experiments, pointing out the necessity of systematic work.



CEMENT ASSOCIATION MEETING.

(BEGINNING UPPER LEFT HAND CORNER)

1—Chas. F. Wade, Jonesville, Mich., Omega Portland Cement Co.; 2—Jas. W. Zippertline, Philadelphia, Pa., Wm. G. Hartranft Cement Co.; 3—W. P. Corbett, New York City, Alsen American P. C. Works Co.; 4—W. C. Turner, Nazareth, Pa., Phoenix Cement Co.; 5—Ira C. Hutchison, New York City, Whitehall Portland Cement Co.; 6—J. R. Patterson, Union City, Mich., Peerless Portland Cement Co.; 7—J. A. Myers, Detroit, Mich., Aetna Portland Cement Co.; 8—W. J. Prentiss, Pittsburgh, Pa., Castalia Portland Cement Co.; 9—G. W. Hacknett, Pittsburgh, Pa., Castalia Portland Cement Co.; 10—R. W. Leslie, Philadelphia, Pa., American Cement Co. of New Jersey; 11—Chas. A. Matcham, Allentown, Pa., Lehigh Portland Cement Co.; 12—Jno. C. Robinson, St. Louis, Mo., St. Louis Portland Cement Co.; 13—W. C. Kent, Philadelphia, Whitehall Portland Cement Co.; 14—P. B. Reery, Sandusky, Ohio, Sandusky Portland Cement Co.; 15—J. B. Lober, Philadelphia, Pa., Vulcanite Portland Cement Co.

(NEXT ROW STARTING ON LEFT)

16—A. F. Gerstel, Easton, Pa., Alpha Portland Cement Co.; 17—Mrs. C. F. Wade, Jonesville, Mich.; 18—Mrs. J. R. Patterson, Union City, Mich.; 19—Albert Moyer, New York City, Vulcanite Portland Cement Co.; 20—D. McCool, Newaygo, Mich., Newaygo Portland Cement Co.; 21—S. B. Newberry, Sandusky, Ohio, Sandusky Portland Cement Co.; 22—W. R. Warren, New York City, Virginia Portland Cement Co.; 23—Richard K. Meade, Easton, Pa.; 24—Jos. Brobst, Nazareth, Pa., Dexter Portland Cement Co.; 25—Morris Pfaelger, Nazareth, Pa., Phoenix Cement Co.; 26—Conrad Miller, Nazareth, Pa., Dexter Portland Cement Co.

(FRONT ROW)

27—S. V. Peppel, Louisville, Ky., ROCK PRODUCTS; 28—W. E. Erdell, Cementon, Pa., Whitehall Portland Cement Co.; 29—H. B. Warner, Philadelphia, Pa., American Cement Co. of New Jersey; 30—H. D. Higinbotham, Chicago, Ill., Newaygo Portland Cement Co.

AFTERNOON SESSION.

The paper presented by Mr. Clifford Richardson, from a scientific point of view, was one of great value, in-so-much as it gave the results of rather a new line of investigations looking toward the ultimate solution of the constitution of Portland cement. The microscope has been the key to the solution of many problems of science, and it is probable that it will do much toward establishing the constitution of Portland cement. Mr. Richardson gave a brief review of the results obtained by others on the observation of various foreign Portland cements. His work was the examination not only of American Portland cement under the microscope in thin sections, but also on chemically pure bodies prepared especially for the purpose of showing the optical character of the various compositions supposed to make up Portland cement as established by theories previously held by other investigators.

The microscope in the hands of others reveals five bodies in foreign Portland cement, which are known under the terms of alite, celite, belite, which is not in all of them felite, and an isotropic mass. Cements which are very high in lime are constituted almost entirely of the bodies alite and celite. The best cements are mainly alite and the American cements show up very well in this respect. Tri-calcium silicate under the microscope, shows very similar properties to alite, but investigation proves that alite is not entirely tri-calcium silicate. The di-calcium silicate is a uniform crystalline mass. Chemical analysis shows the molecular composition of Portland cement to be: $42(\text{SiO}_2, \text{CaO})$ plus $5(2\text{Al}_2\text{O}_3, 3\text{CaO})$. Therefore the ration of silica to alumina is an important matter. The range of lime can be between 63.1 and 68 per cent. Fine grinding can lower the end point in the formation of clinker as much as 200 degrees.

This paper excited a great deal of wonder and interest among the cement manufacturers. The methods of investigation were entirely new to most of them. This paper accompanied with the little talk with which Mr. Richardson prefaced the paper, helped a great deal toward stimulating the cement manufacturers to a concentrated effort, looking toward investigation into the things which take place in the manufacture of Portland cement, and an effort to devise ways and means not only of cheapening the product but also along the line of improving the product, if possible. And it is probable that some action will be taken by the association as a whole, whereby the members, such as are interested, may establish another society or association and put by a fund for this purpose. Mr. Richardson pointed out the fact that most of the colleges will gladly co-operate in this work if the society or the individuals would furnish some little financial support. If a bureau of investigation were established by the manufacturers, the men employed for this purpose would also be used for investigation, with a view to finding new uses for Portland cement, and for defining the best way in which to use Portland cement.

There could not be much discussion of this paper, but many questions were asked Mr. Richardson, and were answered. Mr. Richardson further offered to do all in his power to aid in the research along the lines named.

Owing to the fact that most of the meetings were held in the Steel Pier, the Board Walk was of necessity well patronized, but when the meetings were not in session, you could nearly always find some of the boys on the Board Walk. One and all seemed to be having a very enjoyable time, aside from the pleasure of meeting each other in a body at the sessions.

THE SOCIAL SIDE.

The meetings of the cement boys are always enjoyable affairs, and a social event for the manufacturers, but this one was an exceptional success from a social point of view. The surroundings were all conducive to pleasure and comfort and all were in a happy frame of mind.

One of the most pleasant features of the meeting was the presence of the wives and families of some of the members.

Mrs. Chas. F. Wade, of Jonesville, Mich., Mrs. J. R. Patterson, Union City, Mich., and Mrs. E. F. Gerstell and children were there and circulated freely among the crowd outside of business hours. We are always glad to see the ladies attend conventions.

Among the machinery men who were in Atlantic City during the convention were: H. G. Kimble, of the Kent Mill Co., of New York; H. A. Schaffer, Easton, Pa., of Allis-Chalmers Co.; Fred L. Martin, of R. D. Nuttall Co., Pittsburg, Pa.

Wade and Patterson each took home a trunk full of souvenirs as a result of their experience with the Japanese gambling devices. We suppose they are trying to get in the good graces of the Japs so they can sell them cement later on.

E. Bravender, of Hudson, made a short stay only, but he was "Johnny on the spot" while there.

Jack Meyers, of Detroit, was always on hand and we done our best to get a snap shot of his lengthy profile, but Jack is so modest he would dodge every time he saw the camera. Mrs. Wade and Mrs. Patterson had considerable fun at Jack's expense. Ask him about it.

Some of the boys had a lot of fun at Rock Products' expense.

Hagar and Robinson were quite chummy. I suppose that means that people west of Chicago will have to pay 50c per barrel more for cement now.

One might suppose that Eastern atmosphere did not agree with Mr. Stapleton, the Iola man, by the haste he made to get back West.

Harry Warner is the champion story teller of the crowd.

Kimble was the ladies' man.

Matcham took time for a dip in the brine.

L. V. Clark would rather have a good breakfast than have his picture taken even in such a handsome group.

The group picture does not represent near all present; some were not at the hotel, others had started for home.

Pointer on Reduction and Separation in the Manufacture of Cement and Lime.

There is perhaps no branch of mechanics that has received such scant notice at the hands of scientific men as grinding and pulverizing mills, though under existing conditions the grinding of various materials have become in nearly all industries the most important department of manufacturing plants, and a badly constructed mill can in a short time waste many times the cost of a reliable and economical mill.

Within the last few years the cement people have been very much alive on this point and the new plants are each trying somewhat different. Tube and ball mills replaced buhrs, and later the Griffin mill got a good foothold and quite recently some are adopting the Raymond roller mill, built at Chicago, Ill. The latter makes a specialty of air separation in connection with reduction, thus removing all matter from the mill as fast as it has reached sufficient fineness, and thereby increases economy in reduction, other things being equal.

Air separation properly carried out, makes it possible in handling dry material to control the dust and keep it out of the plant.

Within the past year the lime grinder and producer of hydrated lime has been studying how to get rid of bolting, which has proven expensive on account of the expense of removals of the cloth and time lost.

Several years ago the writer saw a pulverizer and air separator at work on lime and at once concluded that would be the coming method of handling the reduction of lime.

Owing to the caustic properties of lime it is very desirable that as little dust as possible escape to annoy the workmen. Air separation furnishes a means of keeping this at a minimum. Air separation on hydrated lime is economy, since the largest portion need not be ground and is pulled right through at almost no expense.

If we can safely judge from testimonial letters which we have seen, and from the statement of a few lime men who are now using the Raymond Bros. system of pulverization and separation, we must conclude they are satisfying the demand for this purpose.

There is no technical reason why they should not fill the bill since the degree of fineness is under control, and practically all the dust retained within the machine.

Some parties who first tried air separation on lime products failed because they did not have proper feeding devices and did not have patience enough to work out the trouble.

We predict that practically all lime reduction plants will be equipped within the next few years with air separating devices, and that many cement plants will also put them in.

AN ASSEMBLY OF EXPERTS.

Annual Meeting of the American Society for Testing Materials.

GREAT TECHNICAL ABILITY AND BUSINESS TALENT.

ATLANTIC CITY, N. J. June 18.—The annual meeting of the American Society for Testing Materials was held June 16, 17 and 18, with headquarters at the "Traymore."

The last two years have seen a wonderful growth in this society. Two years ago the membership was less than 350, and to-day the number has passed the 500 mark. Prior to two years ago the society had not been overly active, but the energy and effort of the officers during the last two years have been well rewarded, not only by largely increased membership, but by largely increased scope in the matters taken up and the information disseminated. This society is bound to be one of the most influential bodies in the United States.

It is probable that there is represented in the picture presented with this copy more technical ability than has ever before been found in one group in the United States, or in the world. It embraces the best there is in engineering—in the manufactories and among the consumers of raw and manufactured materials; the most eminent engineers and scientists as well as the most successful manufacturers being represented. It is very difficult to get so large a body of very busy men together, and the society should feel highly complimented at the turnout and over the success of the meeting, and we feel sure many more of equal success will follow.

Purpose and Work of the Society.

The purpose of this organization is solely for the dissemination of valuable information, and fully warrants the co-operation that it is receiving from all sides. If you are not now in touch with this society, you should take steps at once to affiliate with it and do your share toward pushing a good thing along.

The scope and influence is but partially realized by most of the people interested in the building trades. They show you what is safe, and how to learn if your materials are right, whether you be a manufacturer, a consumer or a contractor.

The reputation of the men connected with this society is such that if your materials do not fall within the limits set by this body of men as safe you will have a hard time to find a market for them.

Re-Election of the Present Officers.

The election of officers for the coming year amounted practically to a re-election of the old officers: President, Dr. Charles B. Dudley (P. R. R.), Altoona, Pa.; vice president, R. W. Lesley (American Cement Company), Philadelphia, Pa.; secretary, Prof. Edgar Marburg (U. of P.), Philadelphia; member of executive committee, Mr. James Christie (American Bridge Co.), Wissahickon, Pa.

Division of the Work.

The work of the meeting was divided into eight sections. In some cases two sections met simultaneously in separate rooms.

THE FIRST SECTION was devoted mainly to preservative coatings for iron and steel, which embraced the report of Committee E. The chairman of this committee was S. S. Voorhees, of Washington, D. C., and a number of papers along these lines were presented, the discussion being led by Dr. A. H. Sabin. Dr. Dudley took an active part also in the discussion.

THE SECOND SECTION was attended by everybody; and, in the main, was occupied by President Dudley's annual address, "The Influence of Specifications on Commercial Products," and a paper by William Metcalf on "Alloy Steel—Self Hardening and High Speed," and another by R. W. Lesley on "The Growth of the Cement Industry."

President Dudley says: "That two parties are involved in a specification—the producer and the consumer—and that both have a right to a voice in the formation of the specification, and that a carefully planned specification was a protection

Several other papers were presented, one by Clifford Richardson, of Long Island City, on some possible by-products in the Portland cement.

R. W. Lesley made the announcement that a cement plant is now being built in Virginia adjacent to a fertilizer works and it may be found possible to recover the alkalies there and use them in the immediate vicinity.

Mr. F. H. Lewis, Craigsville, Va., presented a paper on "The Boiling Test for Portland Cement." He called attention to the fact that cements might readily be manufactured with a view to passing the boiling test alone.

Mr. W. A. Aiken, Pittsburgh, called attention to a new method of making briquettes for test, which he has been trying out in connection with the material tests for the New York Rapid Transit Railway. He advocates the moulding of the briquettes dry by tamping the dry material into the mould and smoothing the surplus off and then immersing the mould and all in the water for twenty-four hours, after which the mould may be removed. The claim made by Mr. Aiken is that they have been carrying this test along with ordinary tests and find that they got more uniform results.

The experience of R. L. Humphrey, working in

the same manner, did not verify the statement as to uniform results obtainable in this way.

Papers on tests of concrete steel beams were read by Prof. A. N. Talbot, Urbana, Ill.; Prof. F. E. Turneaure, Madison, Wis., and Prof. Marburg, Philadelphia. These papers presented much valuable information along these lines and are of such a nature that an abstract would not do them justice.

Another paper presented at this meeting was the "Mechanical Defects of Sieves Used in Determining the Fineness of Cement," by E. W. Lazell, by photographic enlargements of sieves varying from 50 to 200 mesh and found in many cases serious defects, both in the varying gauge of the wire and the number of meshes, as well as irregularity of mesh. He therefore recommends a very careful examination of all sieves intended for accurate work.

THE ATTENDANCE.

C. B. Dudley, chemist Pennsylvania Railroad Co., Altoona, Pa.; Edgar Marburg, professor of civil engineering, University of Pennsylvania, Philadelphia; H. I. Budd, State Commissioner of Public Roads, Mt. Holly, N. J.; Emil Swensson, consulting engineer, Pittsburgh; R. A. Carter, Monon-

gahela Iron & Steel Mfg. Co., Pittsburg; Charles F. McKenna, chemist, New York; Albert Sauveur, editor *Iron and Steel Magazine*, Cambridge, Mass.; F. W. Davis, Jr., New York; G. M. Goodspad, McKeesport, Pa.; J. R. Worcester, consulting engineer, Boston; S. E. Thompson, Newton Highlands, Mass.; Harry H. Quimby, assistant engineer of bridges, Philadelphia; R. S. Greenman, assistant State engineer, Albany, N. Y.; W. A. Aiken, Inspector of Material, Rapid Transit Railroad Commission, New York; J. W. Schaub, Chicago; J. E. Greiner, engineer of bridges and buildings, B. & O. Railroad, Baltimore; Wm. R. Webster, civil engineer, Philadelphia; W. H. Wickhorst, chemist, C. B. & Q. Ry., Aurora, Ill.; Robert Job, chemist, Philadelphia and Reading Railroad, Reading, Pa.; Allen P. Ford, Chicago; Leon S. Moisseiff, assistant engineer to Commissioner of Bridges, New York; F. O. Bunnell, engineer of tests, C. R. I. & P. Ry., Chicago; Malcolm McNaughton, Joseph Dixon Crucible Co., Jersey City, N. J.; E. C. Holton, chemist, Sherwin-Williams Co., Cleveland, O.; C. C. Schneider, vice president American Bridge Co., Philadelphia; O. Hoff, New York; C. L. Huston, vice president Lukens Iron and Steel Co., Coatesville, Pa.; G. W. Thompson, chemist, Na-



MEETING AMERICAN SOCIETY FOR TESTING OF MATERIALS, ATLANTIC CITY, N. J.

Balcony row 1 to 15 beginning on the left: 1—Gaetano Lanza, Boston, Mass.; 2—; 3—Richard G. Moldenke, New York City; 4—T. D. West, Sharpsville, Pa.; 5—; 6—A. N. Talbot, Urbana, Ill.; 7—H. P. Talbot, Boston, Mass.; 8—John G. Brown, Philadelphia, Pa.; 9—Robert Job, Reading, Pa.; 10—Jesse J. Shuman, Pittsburgh, Pa.; 11—Albert Swensson, Cambridge, Mass.; 12—S. Tobias Wagner, Philadelphia, Pa.; 13—Charles M. Mills, Philadelphia, Pa.; 14—W. L. Webb, —; 15—A. L. Johnson, St. Louis, Mo.

Top row 16 to 37: 16—W. R. Webster, Philadelphia, Pa.; 17—Charles Major, Philadelphia, Pa.; 18—C. C. Schneider, Philadelphia, Pa.; 19—James Christie, Philadelphia, Pa.; 20—F. H. Lewis, Fordwick, Va.; 21—; 22—Charles L. Huston, Coatesville, Pa.; 23—P. E. Carhart, Chicago, Ill.; 24—W. A. Bostwick, Pittsburgh, Pa.; 25—William R. Dunn, Easton, Pa.; 26—; 27—; 28—P. H. Conradson, Franklin, Pa.; 29—William Metcalf, Braeburn, Pa.; 30—M. H. Wickhorst, Aurora, Ill.; 31—C. W. Boynton, Wheeling, W. Va.; 32—; 33—Iron Trade Review, Cleveland, O.; 34—Iron Age, F. W. Shultz, New York City; 35—W. K. Hatt, Lafayette, Ind.; 36—Henry Fay, Boston, Mass.; 37—S. S. Voorhees, Washington, D. C.

Second from top row is 38 to 58: 38—J. R. Worcester, Boston, Mass.; 39—F. E. Turneaure, Madison, Wis.; 40—; 41—A. A. Stevenson, Burham, Mifflin Co., Pa.; 42—Walter Wood, Philadelphia, Pa.; 43—William Kent, Syracuse, N. Y.; 44—F. B. Fackenthal, Easton, Pa.; 45—John C. Robinson, St. Louis, Mo.; 46—John B. Lober, Philadelphia, Pa.; 47—Richard L. Humphrey, Philadelphia, Pa.; 48—W. A. Aiken, Pittsburgh, Pa.; 49—Railway Gazette, New York City; 50—H. E. Diller, Chicago, Ill.; 51—Henry H. Quimby, Philadelphia, Pa.; 52—Joseph Royal, Rutledge, Pa.; 53—Stephen W. Baldwin, New York City; 54—E. R. Maurer, —; 55—Chas. S. Gowen, Ossining, N. Y.; 56—E. S. Larned, Boston, Mass.; 57—George H. Hull, New York City; 58—

Third from top is 59 to 80: 59—R. C. Carpenter, Ithaca, N. Y.; 60—G. M. Goodspeed, McKeesport, Pa.; 61—; 62—Chas. A. Matcham, Allentown, Pa.; 63—Edward M. Hagar, Chicago, Ill.; 64—Harry J. Seaman, Catskill, N. Y.; 65—R. W. Lesley, Philadelphia, Pa.; 66—W. H. Harding, Philadelphia, Pa.; 67—Chas. S. Churchill, Roanoke, Va.; 68—Edgar Marburg, Philadelphia, Pa.; 69—C. B. Dudley, Altoona, Pa.; 70—Allen P. Ford, Chicago, Ill.; 71—Albert Sauveur, Boston, Mass.; 72—G. H. Clamer, Philadelphia, Pa.; 73—C. E. Skinner, East Pittsburgh, Pa.; 74—; 75—H. H. Campbell, Steelton, Pa.; 76—W. O. Dunbar, Altoona, Pa.; 77—E. M. McLean, Altoona, Pa.; 78—G. W. Thompson, Brooklyn, N. Y.; 79—C. W. Shermer, Belleville, Pa.; 80—

Bottom row is 81 to 96, beginning on left side: 81—; 82—J. A. Kinkead, Schenectady, N. Y.; 83—Ira H. Woolson, New York City; 84—; 85—Wm. R. Webster, Philadelphia, Pa.; 86—J. E. Greiner, B. & Q. Ry., Baltimore, Md.; 87—J. A. Colby, Philadelphia, Pa.; 88—J. W. Shaub, Chicago, Ill.; 89—W. C. DuComb, Jr., Philadelphia, Pa.; 90—Rudolph P. Miller, New York City; 91—H. Taggart, Coatesville, Pa.; 92—; 93—Leon S. Moisseiff, New York City; 93—Wm. Jordan, Jr., Philadelphia, Pa.; 94—; 95—E. W. Lazell, Lathbury & Spackman, Philadelphia, Pa.; 96—J. M. Goddell, New York City. Nos. 45, 46, 62, 63, 64, 65 and 66 represent over 65 per cent. of the output of Portland cement in the United States.

tional Lead Co., New York; George R. Bentley, Central Iron and Steel Co., Harrisburg, Pa.; Chas. Major, American Bridge Co., Pencoyd, Pa.; Wm. Jordan, Jr., University of Pennsylvania, Philadelphia; A. O. Backert, *The Iron Trade Review*, Pittsburgh; S. S. Voorhees, engineer of tests, Treasury Department, Washington, D. C.; Geo. C. Warner, Sullivan Machinery Co., Claremont, N. H.; A. P. Hume, Pencoyd, Pa.; Joseph Royal, inspecting engineer, Philadelphia; C. S. Churchill, chief engineer, Norfolk & Western Ry., Roanoke, Va.; P. H. Conradson, Franklin, Pa.; Frank P. Cheesman, National Paint Works, Williamsport, Pa.; C. Richard, Long Island City, N. Y.; C. N. Forrest, chemist and inspector, Long Island Railroad, Long Island City, N. Y.; A. S. Cushman, Washington, D. C.; W. P. Taylor, Philadelphia; L. W. Page, chief of road material laboratory, Dept. of Agriculture, Washington, D. C.; T. D. Lynch, Westinghouse Electric & Mfg. Co., Pittsburgh; Henry M. Loomis, chemist, International Acheson Graphite Co., Niagara Falls; W. C. DuComb, Jr., engineer of tests, Philadelphia; Fred W. Schultz, *Iron Age*, New York; R. P. Miller, chief engineer, Bureau of Buildings, New York; John M. Goodell, *Engineering Record*, New York; A. N. Stewart, New York; I. H. Woolson, New York; W. M. Johnson, Pittsburgh; F. E. Schmitt, New York; N. A. Hallett, cement inspector, Boston; W. O. Dunbar, assistant engineer, Pennsylvania Railroad, Altoona, Pa.; A. L. Johnson, chief engineer, Expanded Metal Fireproofing Co., St. Louis; W. M. Saunders, chemist, Providence, R. I.; C. W. Sherman, general manager, Pennsylvania Malleable Co., Pittsburgh; R. K. Meade, chemist, Northampton Portland Cement Co., Easton, Pa.; H. J. Lamon; John C. Robinson, St. Louis Portland Cement Co., St. Louis; H. E. Diller, Western Electric Co., Chicago; R. C. Davison, *Railroad Gazette*, New York; E. McLean, Altoona, Pa.; J. J. Shuman, Jones & Laughlin Steel Co., Pittsburgh; John McLeod, Carnegie Steel Co., Pittsburgh; P. E. Carhart, Illinois Steel Co., Chicago; A. Bonzano, Bonzano Rail Joint Co., Philadelphia; R. W. Lesley, American Cement Co., Philadelphia; J. F. Walker, chemist, Protectus Co., Bridgeport, Pa.; G. E. Thackray, Cambria Steel Co., Johnstown, Pa.; C. H. Clifton, Philadelphia Municipal Testing Laboratory, Philadelphia; H. H. Campbell, general manager, Pennsylvania Steel Co., Steelton, Pa.; G. Lindenthal, consulting engineer, New York; F. H. Lewis, Fordwick, Pa.; C. Matcham, manager of Lehigh Portland Cement Co., Allentown, Pa.; J. G. Brown, Philadelphia; E. M. Hagar, Cement Department, Illinois Steel Co., Chicago; C. W. Boynton, cement inspector, B. & O. Railroad, Chicago; N. M. Edwards, Montreal, Can.; Clinton R. Stewart, Cambria Steel Co., Johnstown, Pa.; J. C. Ramage, supt. of tests, Southern Railway, Alexandria, Va.; Louis Cheeseman, Sr., Alexandria, Va.; A. H. Sabin, chemist, New York; A. N. Johnson, highway engineer, Maryland Geological Survey, Baltimore; A. W. Dow, inspector of asphalts and cements, Washington, D. C.; William Metcalf, Braeburn Steel Co., Pittsburgh; E. S. Larned, United Building Materials Co., Boston; James Christie, American Bridge Co., Philadelphia; W. W. Lemen, Roanoke, Va.; Millard E. Barcus, Philadelphia; W. A. Bostwick, Carnegie Steel Co., Pittsburgh; Samuel T. Wagner, city engineer, Philadelphia; Geo. S. Webster, chief engineer, Bureau of Surveys, Philadelphia; A. N. Talbot, University of Illinois, Urbana, Ill.; G. H. Clamer, Ajax Metal Co., Philadelphia; Richard Moldenke, secretary American Foundrymen's Association, Watchung, N. J.; W. K. Hatt, Purdue University, Lafayette, Ind.; E. R. Maurer; J. Jenkins, Montclair, N. J.; A. A. Stevenson, Standard Steel Works, Burnham, Pa.; E. W. Lazell, Philadelphia; John B. Lober, Vulcanite Portland Cement Co., Philadelphia; Richard L. Humphrey, Buckhorn Portland Cement Co., Philadelphia; William Kent, dean of L. C. Smith College of Applied Science, Syracuse, N. Y.; W. R. Dunn; Gaetano Lanza, Massachusetts Institute of Technology, Boston; Henry Fay, Massachusetts Institute of Technology, Boston; Stephen W. Baldwin, Pennsylvania Steel Co., New York; Chas. M. Mills, Rapid Transit Co., Philadelphia; H. Taggart, engineer of tests, Lukens Iron and Steel Co., Coatesville, Pa.; H. E. Smith, chemist, L. S. & M. S. Ry. Co., Collinwood, Ohio; C. S. Reeves, Philadelphia; George H. Hull, American Pig Iron Storage Warrant Co., New York; H. M. Peirson, Radnor, Pa.; C. W. Roeper, Philadelphia; F. E. Turneaure, University of Wisconsin, Madison, Wis.; Chas. C. Pilgrim, Newark, N. J.; W. H. Harding, Philadelphia; H. F. Moore, mechanical engineer, Riehle Bros. Testing Machine Co., Philadelphia; A. W. Murkell, Wheeling, W. Va.; Walter L. Webb, Philadelphia; Joseph W. Hunter, State Highway Commissioner, Jenkintown, Pa.; George Freeman, Jr., Freeport, La.; C. D. Mathews, Camden, N. J.; Thomas D. West, Thomas D. West Foundry Co., Sharpsville, Pa.; C. E. Skinner, Westinghouse Electric & Mfg. Co., Pittsburgh; C. R. Gardiner, Pittsburgh; Nathan H. Davis, Philadelphia; H. A. LaChicotte, engineer, Manhattan Bridge, New York; E. F. Kenney, Philadelphia; Geo. B. Hartley, Syracuse, N. Y.; Henry J. Hartley, Philadelphia; Walter Wood, R. D. Wood Co., Philadelphia; W. M. Parks, U. S. Navy; J. A. Kinhead, engineer of tests, American Locomotive Co., Schenectady, N. Y.; George P. Hemstreet, Hastings Pavement Co., Hastings-on-Hudson, N. Y.; B. F. Fackenthal, Jr., Thomas Iron Co., Easton, Pa.; J. A. Colby, inspecting engineer, Philadelphia; Tinus Olsen, Tinus Olsen & Co., Philadelphia; A. Falkenau, Falkenau-Sinclair Co., Philadelphia; Charles F. Gowen, engineer, New Croton Dam, Ossining, N. Y.; William Campbell, Columbia University, New York; Herman von Schaub, St. Louis; William A. Polk, Patterson-Sargent Co., New York; J. E. Ober, Schenectady, N. Y.; James Barrall, civil engineer, Washington, D. C.; Paul Kreutzpointner, Pennsylvania Railroad, Altoona, Pa.; H. V. Wille, engineer of tests, Baldwin Locomotive Works, Philadelphia, and S. V. Peppel, Rock Products, Louisville, Ky.

Another Cement-Block Machine.

We have just received a neat little booklet from the Cottom Artificial Stone Manufacturing Co., with an office in the Callahan Building, Dayton, Ohio. It is a very nicely gotten up booklet with illustrations of a number of handsome dwellings which have been built from their blocks as well as cuts of machines in various positions. They will no doubt be glad to forward you one of these if you will mention Rock Products.

Artificial Grindstones.

Artificial stone seems bound to enter all fields of usefulness that the natural product does. Benj. F. Schwier, of Cleveland, Ohio, is out with an artificial grindstone which is made from,

Shale .....	.50
Grit sand .....	.30
Fire clay and Jolli clay .....	.10

The mixture is molded and burned in a kiln.

William Lough, Arcola, Ill., is erecting a plant for the manufacture of hollow cement blocks.

Alderman J. C. Smith, Rockhaven, Pa., is organizing a company to manufacture hollow concrete building blocks.

The Escanaba Cement Works, Escanaba, Mich., have a well equipped plant and are manufacturing artificial building blocks upon a large scale.

The Phoenix Contracting Co., of Springfield, Mo., have been incorporated to quarry and manufacture artificial stone. C. R. Hunt, E. H. Jones and W. C. Scarritt are the incorporators.

The Ideal Concrete and Cement Co. Cambridge City, Ind., has been incorporated with a capital stock of \$10,000.00. The directors are: D. E. Petro, William Ulerich, Gustavus Garrett, C. C. Wissler and A. R. Feemster.

Hon. John H. Fellows and J. W. Browning have established a factory to make hollow concrete blocks at Scranton, Pa., with a capital stock at Scranton, Pa., with a capacity of 25,000 blocks a day.

The Western Indiana Hydraulic Stone Co., under the management of W. A. Staley began the erection of a plant at Terre Haute, Ind., which will have a capacity of 10,000 concrete blocks per day.

The Maumee Cement Block Co., Toledo, Ohio, has been incorporated with a capital stock of \$10,000.00. The company will make cement blocks and deal in builder's material generally. The company is incorporated by Wm. J. McGarr and others.

The New Mexico Stone Manufacturing Co., Albuquerque, N. M., is building up a thriving business with their hollow cement building blocks. Mr. J. M. Ackerman, the general manager, and B. L. Spencer are the gentlemen personally in charge of the Albuquerque yard.

Artificial Stone

Sand-Lime Brick.

WILMINGTON, DEL., May 19, 1904.
To the Editor of Rock Products: The writer as you know has been investigating the various methods of manufacturing sand-lime brick and machinery used for this purpose, and in connection with this work has visited plants all over this country and Canada.

The impression conveyed to him is that there is no perfect or complete plant in existence to-day. The business seems to be in the hands of two classes of people, the first the promoter who has a system to exploit, and whose interest ceases after a plant or territory has been sold, and the second, the purchaser and would-be manufacturer who is attracted by the large profits represented to him to be derived. They know little or nothing of the business from a scientific or mechanical standpoint. They begin their investigations after they have made their failures. This has given rise to the thought that it would be a desirable thing for the present and prospective manufacturers to form an association for the purpose of establishing headquarters and employing a competent man whose duties it shall be to collect such data from the machinery men and manufacturers, on the manufacture of sand-lime brick, as may be needed and will be of value. Have such meetings and discussions as will be of mutual benefit. The work which this association shall do will steer the prospective manufacturer or investor clear of rocks and shoals, which otherwise he is bound to encounter.

I know of one case where a company paid twice the value for a plant and so-called system, than they need to have paid for the machinery in open market, and are unable to make good brick.

Would it not be far cheaper for us all to join hands and contribute a small amount to such an association which would do our experimenting for us, than for each of us to experiment independently at a far greater expense of time and money? If each manufacturer contributed his experience to the association we would get better plants, better bricks, more profits and fewer systems and less promoting. It is entirely in the interest of the manufacturer that all plants turn out good bricks in order that a good reputation may be established for the sand-lime brick. Very truly,

H. O. DUERR.

The suggestion of Mr. Duerr is a timely one. Every man in the sand brick industry should be interested. There is no question but what if Mr. Duerr's idea was carried out, it would be productive to all concerned. The data furnished by the association could be used by all.

We are willing to do all that is reasonable to promote the best interests of any trade we represent and will gladly co-operate in any movement in that direction.

We will greatly appreciate it if every lime-sand-brick man will write us at once, giving us his idea as to the desirability of such a move.

Confident of Success From the Start.

FORT SMITH, ARK., June 23.—H. F. Rogers, manager of the Arkansas Granite Brick Co., writes, "Your information in last month's paper was a little twisted, as we never started our plant upon an experimental basis, for we have been selling brick since same were made, and we knew the brick would be a success before we started operations."

Another Building Block Machine.

GRAND RAPIDS, MICH., June 16.—Mr. E. W. Seamans has just placed a new machine on the market for making building blocks, 8 inches high, 10 inches wide and 20 inches long, making either rock face, plain or beveled edge blocks. On account of the demand for the different sizes of blocks, Mr. Seamans was forced to make a machine of this size. He has already placed the machine in Iowa, Michigan, Indiana and Canada.

C. S. Session, Palmyra, N. Y., has added to his contractors' supply business a plant for the manufacture of hollow cement building blocks.

The Currie Cement Construction Co., Detroit, Mich., has been capitalized at \$5,000.00, by Wm. H. Holden, George P. Currie and Allan P. Cox.

Flatley Bros. & Co., Green Bay, Wis., who have manufactured artificial stone by hand successfully for a long time will install machinery in order to increase their capacity.

The Jordan Lake Sand Co., of Lake Odessa, Mich., have purchased the necessary machinery, and will engage in the manufacture of cement bricks upon upon a large scale.

Jones & Crawford are establishing a plant at Omaha, Neb., for manufacturing concrete stone. They will commence operations as soon as the necessary machinery is received.

Mr. S. E. Kessler is figuring with several cement block machine manufacturers, and expects in the near future to add such an industry to his contractors' supply business at Columbia City, Indiana.

The Hartford Concrete Block Co., Hartford, Conn., has been incorporated with a capital stock of \$12,000.00. The incorporators are: James O'Laughlin, of New Britain, and John F. Conniff and Francis W. Howard, of Hartford.

S. J. Mandeville, J. E. Sweet and S. C. Elmore, of Martinsville, Ind., have formed a company to manufacture cement stone blocks for building purposes. They have a factory established on a small scale and expect to increase the capacity as fast as the business grows.

The Muskogee Hydraulic Stone Manufacturing Co., Muskogee, I. T., has been incorporated with a capital stock of \$15,000.00, and has elected the following officers: J. O. Callahan, president; A. E. Bonnell, vice president, B. G. Slaughter, secretary, and D. H. Middleton, treasurer.

The Kankakee Pressed Stone Co., Kankakee, Ill., has been incorporated with a capital stock of \$2,500.00. The incorporators are: R. G. Risser, W. Smith and George Carson. The concern will make cement building blocks and are building a factory especially for that purpose.

W. H. Hilton and J. H. Culver, of Decatur, Ill., and W. J. Kinney, of Charleston, are arranging to incorporate the Decatur Litholite Stone Co., for the purpose of manufacturing concrete building stone. They will erect a building 50x100 feet and enter business upon an extensive scale.

The Hayden Automatic Block Machinery Co., of Columbus, Ohio, has been incorporated with \$16,000.00 capital stock by Wm. B. Hayden, Nathan B. Marple, Lemuel D. Lilly, Frederick W. Prentiss and Gebhard Jaeger. They will make machines for the manufacture of cement or clay building or paving brick.

The Hampton Cement Product Co., Hampton, Iowa, has been incorporated with a capital stock of \$10,000.00, for the purpose of manufacturing hollow building blocks. The incorporators are: G. F. Beed, N. W. Beebe, F. A. Harriman, T. W. Purcell, G. E. Sargent, T. C. Cartwright, A. R. Runyard and W. E. Hoxie.

The Newark Artificial Stone and Plaster Co., Newark, Ohio, have just started the manufacture of concrete building blocks under propitious circumstances. A. R. Pitser, is president; J. A. McNamar, vice president; F. T. Mercer, secretary and C. E. Cochran, treasurer. Twenty-five men will be employed at the start. The plaster department has not yet been commenced.

Thompson, Hubman & Fisher, Tonawanda, N. Y., are erecting a factory 150 feet long and two stories high in which they will manufacture artificial stone for building purposes. The process is something entirely new and has been patented by the local manufacturers who have already supplied a number of orders in the Tonawanda's and some orders are to be filled as soon as the new factory is completed.

The Diamond Stone-Brick Co., Wilmington, Del., has been reorganized with the following officers: Charles Warner, president; H. O. Duerr, vice president; Horace G. Knowles, secretary, and Wm. T. White, treasurer. The company is building a factory for the making of brick and artificial stone out of sand and lime by a patent process. The capacity of the plant will be 40,000 brick and 200 cubic yards of stone per day, and will probably be in operation by the middle of July.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

OFFICERS:

JOHN A. KLING	President.
Cleveland Builders' Supply Co., Cleveland, O.	
JAMES G. LINCOLN	Vice President.
Waldo Bros., Boston, Mass.	
W. S. HUMBERT	Vice President.
W. S. Humbert, Inc., Buffalo, N. Y.	
AMBROSE TOMKINS	Vice President.
Tomkins Bros., Newark, N. J.	
ADDISON H. CLARKE	Vice President.
Wm. Wirt Clarke & Son, Baltimore, Md.	
S. D. LINCOLN	Vice President.
National Mortar Co., Washington, D. C.	
WALTER T. BRADLEY	Vice President.
Walter T. Bradley Co., Philadelphia, Pa.	
R. W. MARSHALL	Vice President.
Wheeling Wall Plaster Co., Wheeling, W. Va.	
C. E. McCAMMON	Vice President.
L. H. McCammon Bros., Cincinnati, O.	
E. E. EVANS	Vice President.
Boutell Bros. & Co., Bay City, Mich.	
E. M. BALTES	Vice President.
E. M. Baltes & Co., Ft. Wayne, Ind.	
OWEN TYLER	Vice President.
Louisville, Ky.	
G. J. PARKE	Vice President.
V. H. Park & Son Co., Decatur, Ill.	
C. P. FLATLEY	Vice President.
Flatley Bros. & Co., Green Bay, Wis.	
GORDON WILLIS	Vice President.
Hunkins-Willis Lime & Cement Co., St. Louis, Mo.	
J. N. THAYER	Treasurer.
O. C. Thayer & Son, Erie, Pa.	
RICHARD KIND	Secretary.
Toledo, Ohio.	
HARRY S. WEST	Assistant Secretary.
Toledo, Ohio.	

EXECUTIVE COMMITTEE:

JOHN A. KLING, Chairman	Cleveland, Ohio.
D. J. KENNEDY, D. J. Kennedy Co.	Pittsburg, Pa.
C. W. S. COBB, Glencoe Lime & Cement Co.	St. Louis, Mo.
A. B. MEYER, A. B. Meyer & Co.	Indianapolis, Ind.
C. H. LITTLE, C. H. Little Co.	Detroit, Mich.
F. S. WRIGHT, Meacham & Wright	Chicago, Ill.
RICHARD KIND, Toledo Builders' Supply Co.	Toledo, O.

Official Organ, ROCK PRODUCTS.

"We Sell to Dealers Only."

This is the plea from the manufacturers' standpoint. The editor of Rock Products for fifteen years has been coaxing, urging and pushing manufacturers to sell through the dealers. We believe that is the proper channel for the trade to move. There is less of it in the Rock Products line than in any other department of builders' supply lines because the dealer has been too avaricious. He is not always to blame, but it does seem that he ought to help himself and help the manufacturers he represents by loosening up on his profit.

For instance, "I think one fault of the cement business to-day," said a prominent manufacturer to Rock Products recently, "is that the dealers are not doing the proper thing by the cement man. They are buying their Portland cement at \$1.50 f. o. b. yard and they are selling it at \$2.50. In other words, they are retarding business by asking a profit equal to the cost of the manufactured cement. Now when the present low prices are in force, they ought to use it to increase the volume of the business, and thus open up new channels which will put profit in the pocket of both the manufacturer, when he gets to his proper state of mind, and the dealer."

My experience in builders' supply lines, of course, is limited, but it occurs to me from what I see that the general policy of the business is to sell a great volume, and be satisfied with a medium profit; but in the case of cement at the present

time, it is the reverse. The cement manufacturers cannot be blamed for not wishing to tie themselves up with a small dealer in a town who wants control of half a dozen brands when he don't stir his stumps in endeavoring to increase the volume of business in cement in his line. Of course we are all of us taking all we can get, but it is a question whether the present policy in cement lines is not a "penny wise and pound foolish" proposition.

If the dealers were together from Maine to California they could for a time absolutely dictate, and the present organization of the "Builders Supply Association" is in position to put up some strong arguments and carry them out, but no organization ever succeeds on a plan that works an injustice to the producer.

It takes team work for a baseball club or a craft to succeed. Let's have team work in the builders' supply lines. Let's be willing to give the manufacturer his rights, and then insist on the dealer having his, and you can sum up the results and anticipate that there will be more cement used, the dealer will, therefore, get a profit on a greater number of barrels, and the manufacturer will be prosperous, and each fellow feel kindly towards the other and the consumer will pay the bill.

Builder's Supply Men in Pittsburgh.

PITTSBURG, PA., July 1.—The boys all say things are pretty quiet with us this season, but that means that we all have to keep busy hustling for orders.

We called on Jesse J. Haas, Houston Bros., as we have done on a number of occasions, but did not find him so busy this time as on previous occasions, so we had a little trip around through the warehouses. Jesse had to admit that they could handle more material if they had the orders. You will never realize the large storage capacity in Houston Bros. warehouses until you make the trip through them and see the basement as well as the top stories. After we got through with the trip through the "Cave of the Winds," with its various underground passages under the guidance of Jesse, we were surprised at the amount of material stored out of sight and ready for immediate delivery. Jesse has even discarded that 75c vest which he got up at Buffalo. We do not know whether it is the warm weather or the hard times which made him go without it.

The Houston Bros. Co. started in business some fifteen years ago as a partnership concern and incorporated as the Houston Bros. Co., in May, 1901. The officers are: R. P. Houston, president; S. M. Houston, vice president; A. C. Houston, treasurer, and J. J. Haas, secretary. Their main business is at Thirty-second Street and Pennsylvania Railroad. They have a branch yard at 6200 Penn Avenue, and another at Butler and Forty-ninth Street. They have just recently completed a new warehouse made from concrete block, with a lattice girder self-supporting roof which is the only one of its kind in Pittsburgh. The roof is a 72 ft. span with no posts at all in the warehouse. The warehouse was designed by a Chicago architect. This is the same type of girder as is being used by the British Government for the construction of barracks in Canada and India. The building is 72x100. The interior is shown in the illustration.

After we got through with our trip with Jesse we stepped across the way to see one of his competitors and shook hands with the genial George Heppinstall, the man who some Pittsburghers say calls "A dollar a dollar" and "We do not make contracts with him. All we want is his word." George always has a smile for everybody, and what is more to the point, no matter how busy he is, he always has time to show us through his warehouse. He says, himself, that it does not take a whole week to do that, "but even if our warehouses are not so numerous as some other firms, our arrangements are such that we can deliver large orders with promptness and we guarantee to do all we say we will, whether it is in black and white or not."

George thinks he has a cinch on us. Thinks he saved our life on one occasion when, with the characteristic rush and hustle of Rock Products we were racing to get across Penn Avenue ahead of one of Uncle Sam's white mail cars because there was a prospect of an advertiser on the other side. He yelled "Look out, Shorty," and caused such consternation that we lost our equilibrium and our \$20.00 Panama which we had just given

ROCK PRODUCTS.

the first scrubbing in honor of Pittsburg. We would have beaten Uncle Sam if it had not been for George, but then you know—

George squared himself, however, by taking A. H. Laumann, who was a witness, and himself across the street and insisting that everything was on him except the street cars.

These Pittsburgers are pretty good fellows even if they have so much smoke in their eyes that they do not realize where they ought to spend some of their money. If there is any business in sight the smoke don't seem to bother them at all. They seem to be able to see an order through a stone wall.

Later we had a very pleasant call on W. T. Leggett in his nice suite of offices in the Farmers' Bank Building. Mr. Leggett says he always has his eyes open for an opportunity to make a dollar, but that the opportunities have been mighty scarce in the last year.

In talking things over in a general way he said he felt that builders' supplies would sell at a higher rate of profit during times of depression than during times of prosperity since the running expenses and fixed charges of the builders' supply establishments were just as high in handling a small amount of goods as when handling a large volume of business. This means, of course, that when business is light there must be a larger percentage of cost added for fixed charges for every dollar's worth of business done in order to come out even. Not only this, but during the slow movement of goods through the warehouse a larger amount of capital must be kept inactive, that is, a larger amount in proportion to the amount of money turned over. This is undoubtedly the case, but it is a difficult matter to keep prices where they should be when every one is so anxious to do business and the demand is so light.

Eleven of the Pittsburg fellows in this line of business spend a pleasant afternoon together once in a while and derive much mutual benefit from a social and educational point of view.

A Big Sewer Contract.

DAYTON, Ohio, June 28.—T. D. Eichelberger & Son report that trade is good, in fact it has been necessary to hire extra teams to help out with the hauling. "We are looking after the furnishing end of the large sanitary sewer, which is to be built by the city and will be glad to give any information wanted to responsible parties. The contract will be let July 22, with the following specifications: 121,370 ft. of 8-inch, 7,720 ft. of 10-inch, 2,100 ft. of 12-inch, 8,700 ft. of 15-inch, 4,120 ft. of 18-inch, 1,230 ft. of 20-inch, 2,290 ft. of 24-inch pipe and about 6,500 ft. of 5 ft. concrete sewer, 8 inches to 24 inches first-class sewer pipe (inclusively)."

The St. Louis Lime and Material Co., St. Louis, Mo., has been incorporated with a capital stock of \$50,000.00, by: A. H. Craney, Jr., H. L. Block and E. E. Paramore.

Dull at Present, But Prospects Bright.

LAKE FOREST, Ill., June 14.—Barnett & Griffith say: "We are regular readers of ROCK PRODUCTS and appreciate your journal very highly. We are in the market for Portland cement, lime and plaster. Business is a little dull in our location at the present time, but the prospects are very bright for the season."

Advance in Prices Needed.

CLEVELAND, OHIO, June 24.—Mr. John A. Kling, of the Cleveland Builders' Supply Co. reports that business has not been as good as it was last season, but prospects seem very fair at this time. "Prices are ridiculously low on practically all our material and yet this condition is not influencing any trade whatever, but demoralizing the trade in general, and we hope that prices will stiffen up all along the line soon."

Incorporating a Successful Business.

MIAMI, FLA., June 16.—Joseph A. McDonald, John Reilly and George A. McKinnon are incorporating the J. A. McDonald Co., with a capital stock of \$24,000.00, for the purpose of dealing in lumber, lime, and a general line of building material. The corporation will continue under the same management that has had charge of the business of J. A. McDonald & Co.

SYRACUSE, N. Y.

Strathdee & Nicholson, located at 333 East Genesee Street, Syracuse, N. Y., handle everything in the line of mantels, tile, grates, marble, slate, fenders, fire sets, screens, andirons, gas logs, etc., and selected with special reference to the demands of the trade. The business premises are completely equipped for the storage and display of the large and comprehensive stock. A specialty is made of marble and tile wainscoting and floors. Among some of the recent jobs done by this house may be mentioned the Syracuse Savings Bank, Masonic Temple, Syracuse Trust Co., Syracuse High School and a number of private residences through the city. The character of this business is retail and its trade extends throughout the State. Messrs. John Strathdee and J. Leo Nicholson are possessed of thorough experience in this line.

The Seaboard Air Line railroad has placed an order for 2,000,000 brick with the Decatur Brick Co., Decatur, Ala., recently to be used in the erection of the new freight depot at Birmingham, Alabama.

F. M. Hicks & Co., Chicago, Ill., have for sale for immediate delivery, a lot of very fine standard gauge hopper bottom of cars of 50,000 pounds capacity. They will be glad to furnish full specifications upon application.



Interior of one of the warehouses of Houston Bros., Pittsburg, Pa. J. J. Haas left of wagon and Mr. Houston extreme right.

Side Talk.**Roller Mill and Pneumatic Separator.**

The George Raymond Co., 951 Monadnock Block, Chicago, Ill., in another column of this paper are advertising their improved centrifugal double roller mill and pneumatic separator for grinding and separating all kinds of gold, silver and copper ores, also, cement rock and all kinds of materials that have to be ground. This mill will grind or separate either wet or dry with screens or pneumatic separators to any degree of fineness desired. The object of the invention is to make a mill that is cheap, durable and strong, requiring small power to operate it, giving a larger output than any other mill built heretofore.

The mill has an annular bed plate and a steel die ring fitted solid into it. The base of the bed plate has a solid square bed at the four corners, they are made for four iron columns to support the top plate, which carries the suspended rolls, as well as the pneumatic separator and the main shaft which is fixed into a center plate made adjustable by raised flanges for wooden keys to adjust the main shaft central when it is fastened solid by bolts ad retains its central location.

The driving spider is fitted to the main shaft, having a good long sleeve lined with Phosphor Bronze lining and thrush box located at the lower end of sleeve is chambered out for a self-oiling device and making it dirt proof. At the upper side of the sleeved spider there is a gear fastened to the sleeve of the spider and a pinion shaft with pulley for driving the mill, all incased and housed from dirt. The top plate has circular flanges cast on its under side, for fastening the screens and housing, while the upper sides have circular flanges for the pneumatic separators, thus producing a mill with screens and air separators. The top plate is made with open spaces between the screen and outer housings to admit the air and allowing the finer product to pass through when using the air separator. A mill having 36 in. die rings with 6 in. face admits of two rolls 21 in. by 6 in. face; a die ring of 48 in. diameter admits two 21 in. x 6 in. face, weighing nearly 1,000 pounds; and a 6 ft. ring admits of two rolls of 48 in. diameter by 6 in. face will weigh nearly 3,000 pounds each roll. Any engineer versed in this class of machinery can see the advantage of a machine of this construction.

The screens and pneumatic separator may both be used at the same time, giving a larger output of fine products than can be obtained by any other way; and, the finished product is not carried through the fans as in the old way, requiring larger power and causing a great amount of wear upon the fans.

The company is prepared to furnish blue prints and specifications of their mill for grinding any special material that may be asked for on short notice and with a guarantee.

The Newest Plug Drill.

The latest type of the Dallett Plug Drill, manufactured by the Thos. H. Dallett Co., of Philadelphia, is meeting with deserved praise from quarries throughout the country. This tool has some striking features that will commend it to a careful and discriminating buyer.

One of them is low cost of repairs when necessary. This drill is constructed with a separable inner or working barrel and when same has become worn after long use, this lining can be replaced at a trifling expense, thus rendering the life of a tool practically indefinite. All parts are of the best material obtainable and the Thos. H. Dallett Co.'s reputation for good workmanship does not suffer by an inspection of this tool. They claim to have reduced the quantity of air required for the operation of these tools to a minimum, this being an important consideration to a tool user and a point that does not usually receive the consideration which it should from a purchaser of pneumatic tools. These tools have very little recoil or vibration which will permit of a maximum amount of work on the part of the operator without undue fatigue.

We are pleased to call the attention of our readers to the efficient pulverizing machinery made by E. H. Stroud & Co., of 30-36 La Salle Street, Chicago, Ill., who have recently issued a new catalogue fully describing their machinery, and from a glance through the copy sent to the editor of this paper we should think that it would be well adapted to the use of many of our readers, especially those who have to reduce lime, limestone, phosphate rock, slate, gypsum, natural cement rock and similar material to fine powders. According to their catalogue they make both screen separation and air separation machinery, and, therefore, can give to the buyer almost any result desired from the coarsest work down to most impalpable powders and we would recommend intending buyers to communicate with them. Their advertisement in another column contains a specific announcement.

Willis Shaw, of Chicago, is one of our new advertisers, and calls especial attention to a new quarry and mine hoist which is being built for his trade by the Quincy Engine Works. Mr. Shaw handles a full line of hoisting and conveying machinery, rock drills, compressors, pumps, boilers, crushers, concrete mixers, dump cars, traveling derricks, etc., and caters particularly to quarries and mines. He handles both new and second-hand machinery, and has been established at his present location for the past ten years. He publishes at intervals a printed bargain sheet and price list, and would be very pleased to place your name on his mailing list. His address is 171 La Salle Street, Chicago, Ill.

The American Sewer Pipe Co., Pittsburgh, Pa., announces that their general offices are now located on the eleventh floor of the New Bessemer Building, Sixth Street and Duquesne Way, where they will be pleased to receive their patrons and friends. They are fitted up in much better shape to serve the trade in general.

INFORMATION BUREAU.

819.—We are in the market for crushed stone and Portland cement for building purposes in connection with a stone saw mill.

820.—Where can we get hair for brown mortar.

821.—We are in the market for ground soapstone.

822.—We are in need of a small hand or foot-power concrete mixer suitable for use in small paving jobs.

823.—We are in the market for a continuous supply of possibly one to three cars per week of crushed limestone, from dust to a quarter of an inch, for the purpose of making building stone, combined with Portland cement, and would like prices and samples f. o. b. Memphis, in car lots on a year's supply.

824.—We are in need of Portland cement, lime and plaster.

825.—We want the address of builders of continuous burning lime kilns.

826.—We would like the name of the quarry handling Missouri red granite.

827.—We want putty and putty machinery.

828.—We are in the market for wood fiber machinery.

829.—We want a 15 h. p. portable boiler.

Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 56c a line. Count eight words to a line; add two lines for a head.

WANTED—HELP.

FOREMAN—For rock quarry in Central Illinois; must be thoroughly acquainted with the use of air drills and the handling of dynamite, and capable of handling common labor economically; must be strictly sober. Address, stating full experience, and giving references, ROCK QUARRY, care Rock Products.

ONE SUPERINTENDENT for making building blocks under the Fisher Hydraulic Stone System. Correspond at once with MEMPHIS HYDRAULIC STONE CO., Memphis, Tenn.

SALESMAN—Experienced and high-class salesman, successful in contractors' trade, to handle a leading make of rock drills and compressors. Address Box No. 30, care Rock Products.

SALESMEN—We want good salesmen all over the South for the Winget building block machine. Address A. D. MACKAY & CO., Chamber of Commerce, Chicago, Ill.

SECRETARY—Good business man as secretary or treasurer for an established lime works in North West Arkansas, having an inexhaustible supply of the very best white lime rock in the country. Must take from one fourth to one half of the stock. Apply in first instance to OPPORTUNITY, Rock Products, Louisville, Ky.

WANTED—POSITION.

MAINE HELP—For positions of trust with unquestionable references furnished at short notice. Experienced men in quarries, mills and woods. Address CYRUS FREEMAN STACKPOLE, Bangor, Me.

WANTED—MISCELLANEOUS.

THE NAME OF EVERY PARTY BUYING, SELLING, OR USING any Hollow Concrete Building Block Machines, as well as the location of every building erected with Hollow Concrete Blocks without our license, and for first information we will pay a reward. We want a complete record of such buildings for our office. We are the originators, and are fostering the Hollow Block Industry to the best of our ability by warning the public against the fallacies and pitfalls occasioned by false statements and deceiving literature. Hollow Concrete Block Construction requires SKILL and EXPERIENCE, or proper INSTRUCTION; not one in a hundred has the least knowledge *to-day* of what the *invention consists*; it is not the hollow block in itself, but how to use it to save and make money; how to save cracks in the building; how to save material and breakage in the manufacture; how to avoid making useless blocks; how to secure attractive buildings; what a SYSTEM MEANS that constitutes SUCCESS; these are some of the things the public should know; the RIGHT MACHINES tell the story; it took years to make them RIGHT; WRITE Harrold Johnson, Lumber Exchange, Minneapolis, Minn.; WRITE T. J. Bennett, Owensboro, Ky.; WRITE US for further information and if you have been deceived we will help you recover your money; our business must not be lowered if we can prevent it. HARMON S. PALMER HOLLOW BLOCK CO., Washington, D. C.

TWO OR THREE COPIES of No. 7, Vol. 1, Rock Products. Address Rock Products, 431 West Main Street, Louisville, Ky.

TUNNEL LINING and other concrete work on railroads or public works; any amount, anywhere. Address WILLIAM C. BAXTER, 214 Wainwright Building, St. Louis, Mo.

BUSINESS OPPORTUNITIES.

HALF INTEREST IN QUARRY FOR SALE—One-half of the best general purpose limestone quarry in America; located at Kokomo, Ind., with twice as much business last year as we could do, with a million dollars worth of good stone in site; crushing plant and grinder in the quarry and railroad switch, giving shipping facilities over three roads. One contract of ground stone for glass purposes ten months in the year has netted us from \$10.00 to \$15.00 per day; artificial stone and hollow blocks have been successfully made by two men from glass dust; our territory for sale of stone is from Indianapolis to Michigan City, and Ohio to Illinois with sale in a dozen counties near by that have no stone; on account of old age and poor health will sell one-half interest of 27 acres of quarry on easy terms. For particulars see or write G. W. DEFENBAUGH, Kokomo, Indiana.

FOR SALE—MISCELLANEOUS.

PORLTAND CEMENT PROPERTY—Ideal cement property; inexhaustible raw material, in valley of Virginia; on railroad, accessible to southern territory and to seaboard; will furnish reports, analyses, and terms; will pay to investigate. Address F. W. MAHODD, Southern Railway Building, Washington, D. C.

FOR SALE—PLANT.

A FIRST-CLASS GRANITE-CUTTING PLANT, with a never-failing water power, located in the heart of the granite-producing section of New England, only twelve miles from the celebrated Hardwick and Woodbury, Vt., quarries, and thirty miles from the famous Barre quarries; ample shed room for a gang of men; sheds equipped in good shape for doing monumental work; will be sold cheap. Also undeveloped quarries of granite suitable for building work, within two miles of the plant; a rare chance for any one wishing to go into the monumental or building business. For particulars address ASH, care Rock Products.

A GOOD OOLITE LIMESTONE QUARRY on the C. G. W. railroad, 72 miles south of St. Paul, Minn.; 114 acres of land; ten cottages for men; office building; good side tracks; six fine derricks, 60 ft. high, horse power to each; in the incorporated town of Wasioja. Address J. A. GREEN, Stone City, Iowa.

BLUE STONE—Our entire plant, equipment, quarries, etc., for sale at a low figure; well located, good equipment, well established trade; quarries especially adapted to the production of large platforms and heavy rock; special car for transportation of large platforms; satisfactory reasons for selling. Address F. G. CLARKE BLUE STONE CO., Oxford, N. Y.

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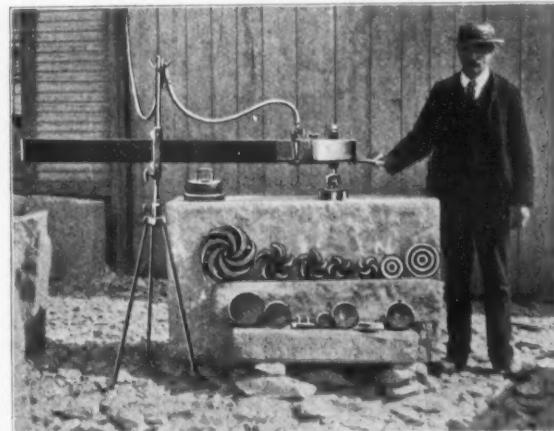
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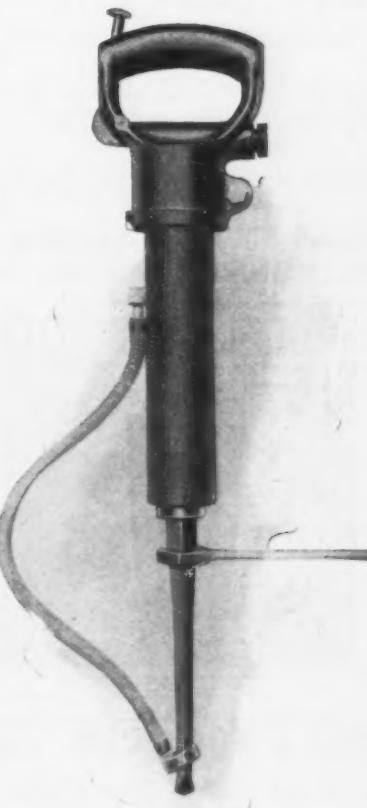
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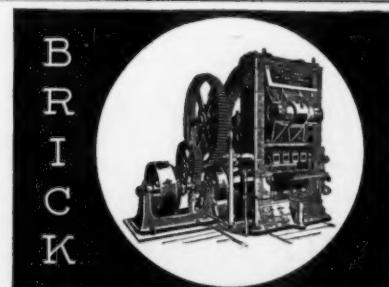
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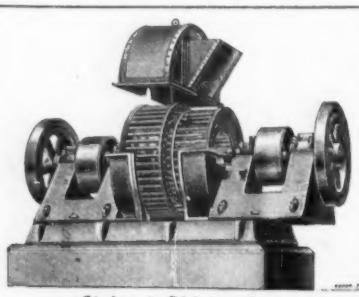
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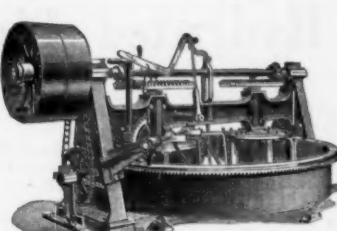
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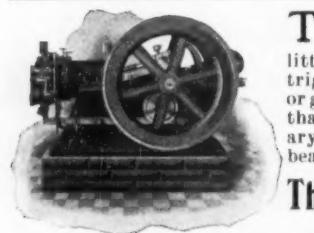
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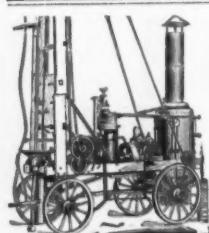


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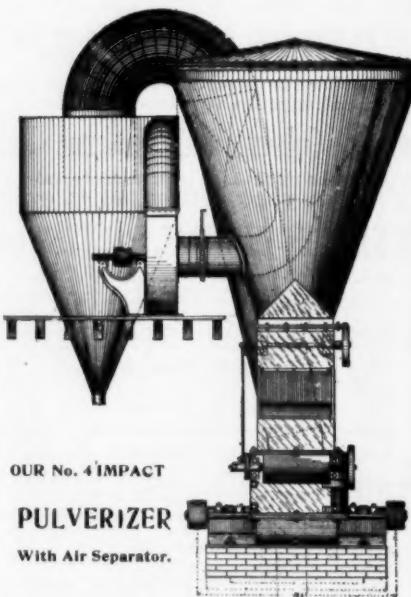
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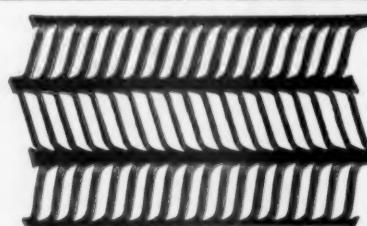
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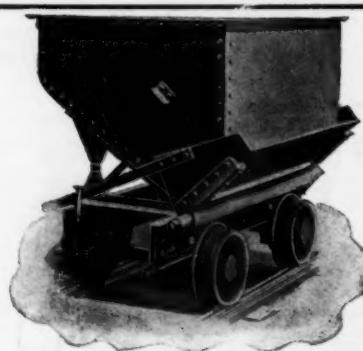
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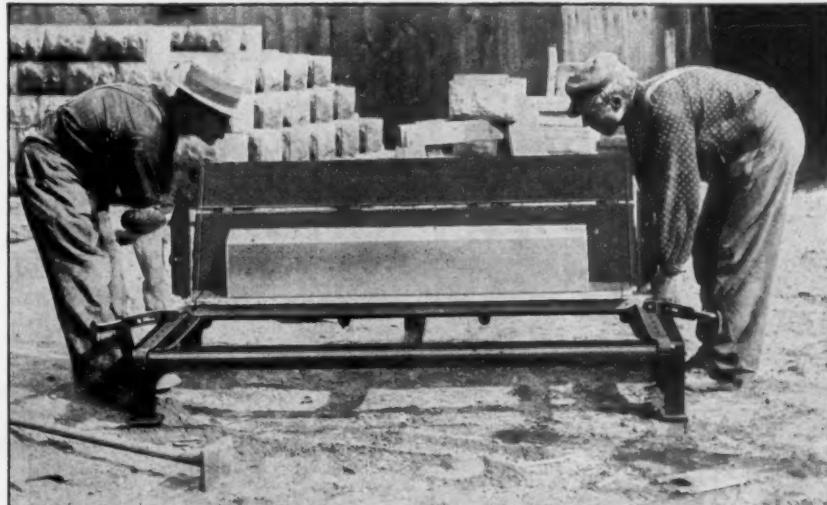
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Write for Special to Dealers and Ask for Our New Catalogue.



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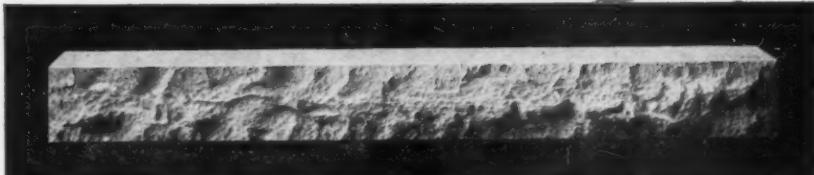
It makes more sizes and designs of stone than any hollow block machine in existence. It makes in addition to hollow blocks, water table, window sills, lintels, steps, curbing, coping, etc. up to 5 feet long.

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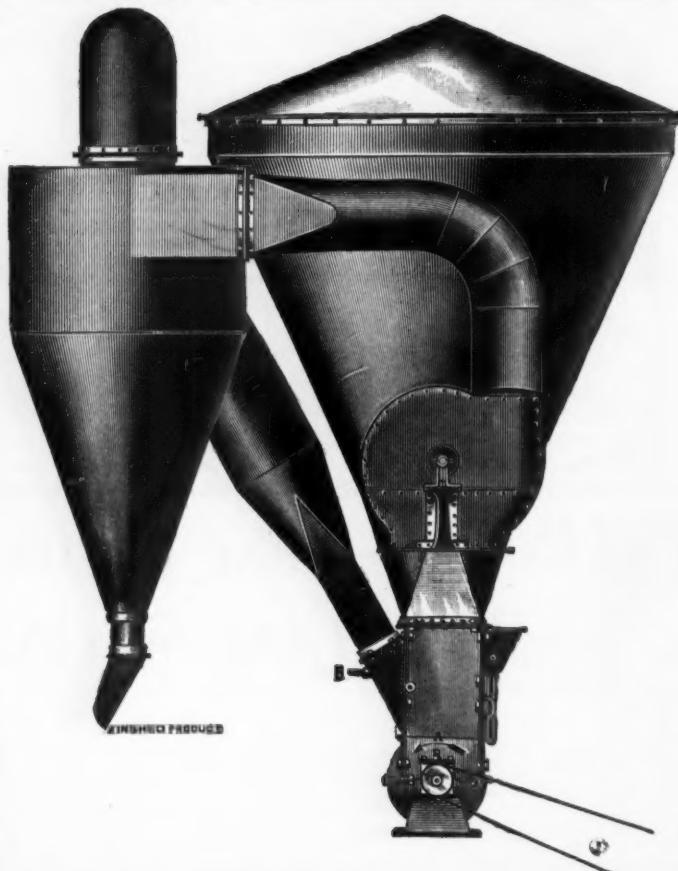
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For the manufacturer of hollow or solid concrete building blocks. Adjustable for all sizes and shapes. Delivers the block on its side, a saving of labor. Wood pellets are used, other machines use iron pellets, a full set of which costs as much or more than price asked for our complete machine. CONSIDER WELL BEFORE PURCHASING. Agents wanted in every State.

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The BRENNAN ROCK and ORE CRUSHER

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We are now grinding all cement so that 90% will pass through a 10,000 mesh sieve.

This increases its efficiency 25% or more.

You can accomplish, without increased cost, more work with a given quantity, as the finer the cement the greater its sand-carrying capacity.

Thus improved,

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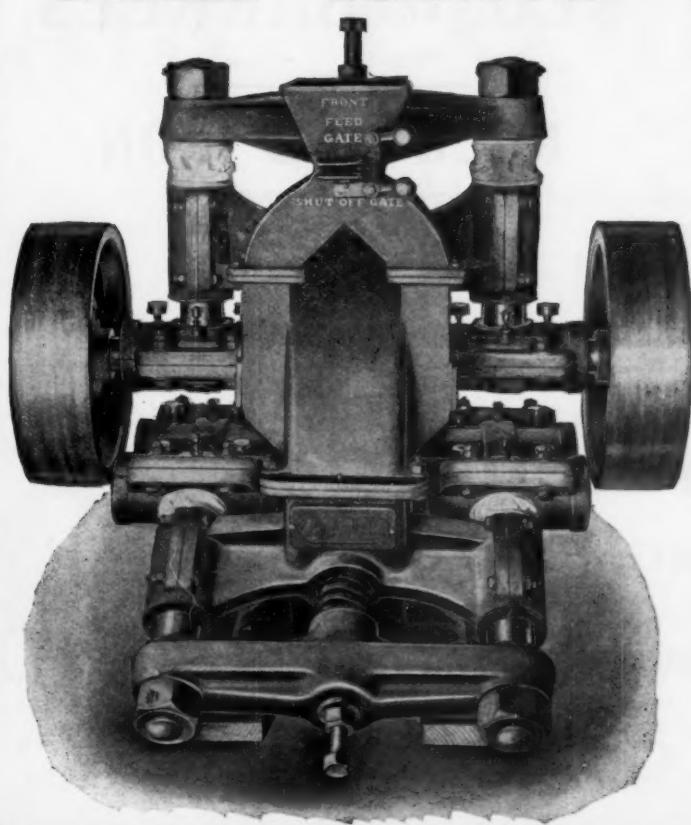
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For all purposes.

THE KENT PULVERIZER



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GRINDS PER HOUR WITH LESS THAN 25 H. P.

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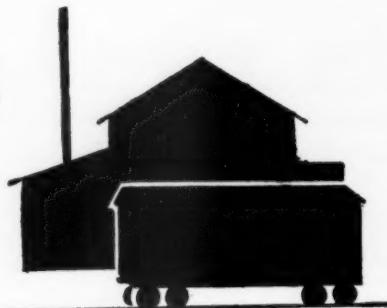
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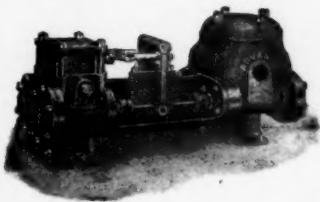
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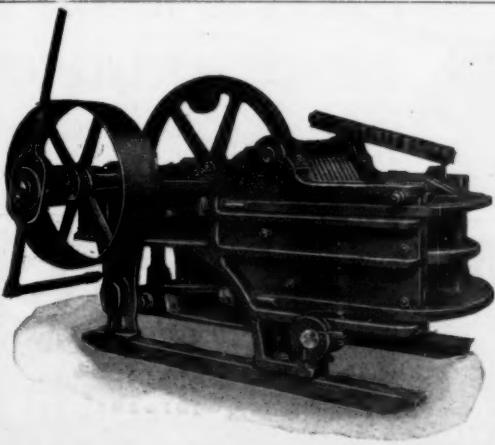
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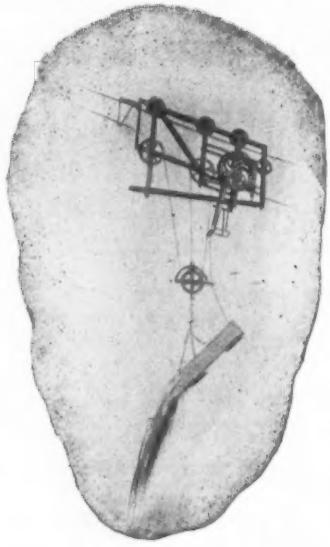
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Save Money, Time,
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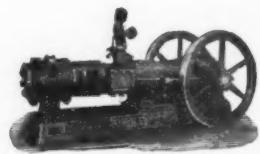
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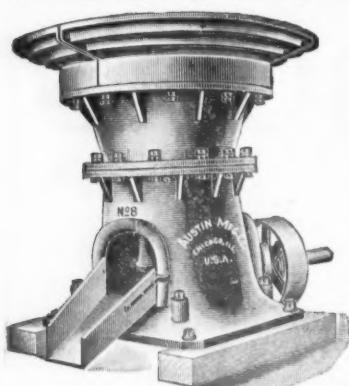
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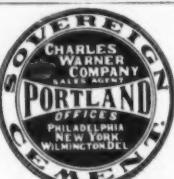
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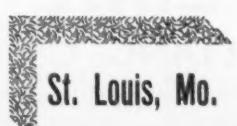
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40 per cent. increase in output of Kilns.
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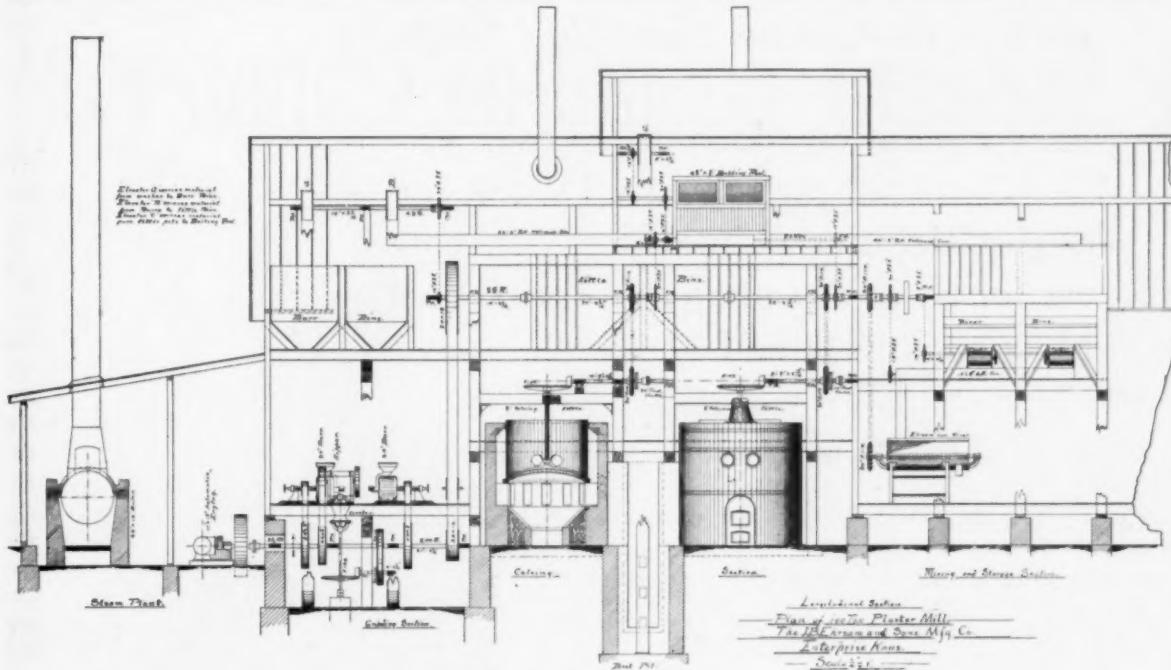
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Miners of GYPSUM and
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Gives the very best results in manufacturing
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Our extensive plant is complete in every department.

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Unsurpassed facilities for filling large orders promptly.

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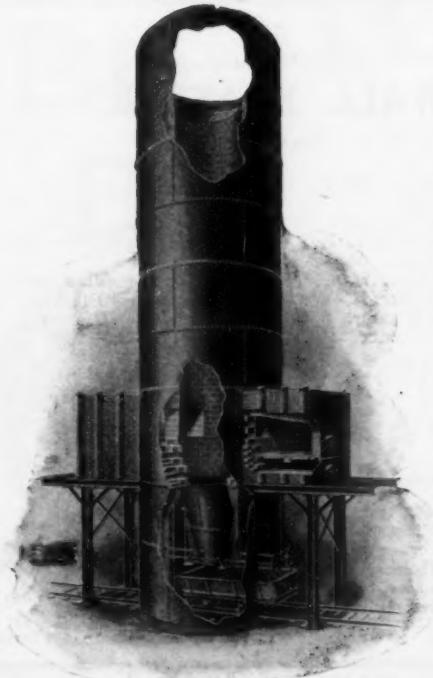
We can give you absolute guarantee of reliable goods.

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Keystone Continuous Burning Lime Kiln



BROOMELL'S PATENT.

Built in the most substantial manner from heavy steel plates; can be set singly or in a battery; easily set up by unskilled labor; no foundations required above the ground level, large storing space for rock at the top.

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**THE NEW PROCESS
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Using our IMPROVED MACHINERY and FORMULAS. The management of the local plant to remain with LOCAL INTERESTS.

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The Ohio Lime Company,

MANUFACTURERS OF AND WHOLESALE DEALERS IN

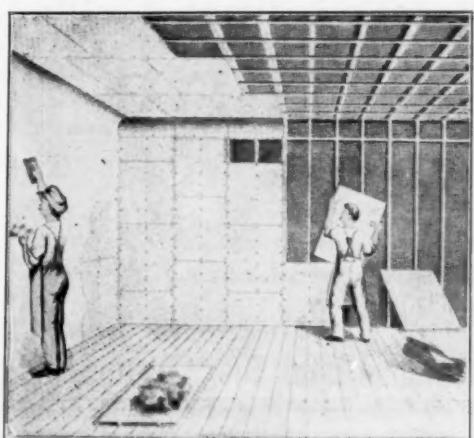
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3500 Barrels
Per Day.

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A material used in the construction of Walls and Ceilings in place of wood and metal lath. Made in Sheets 32" x 36", $\frac{1}{4}$ " thick. Nailed directly to studding and finished with hard plaster.

Sackett Plaster Board is light, economical and durable. Will not warp, buckle or shrink. Is warmer than lath, consequently saves fuel. Is a fire retardant recognized by fire underwriters.

Walls and Ceilings constructed with these boards cannot fall.

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OUR COMPANY:

The Norris and Christian Stone and Lime Company, Marion, Ohio, 20 years of experience.

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Three plants comprising seventeen kilns, with daily capacity of 6000 bushels.

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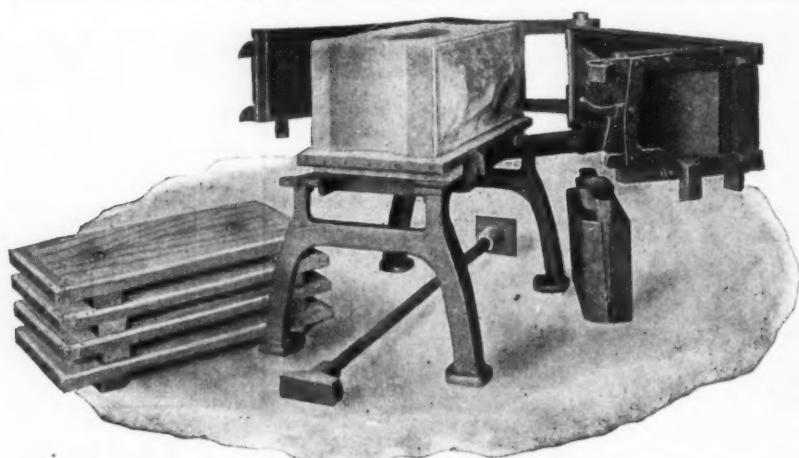
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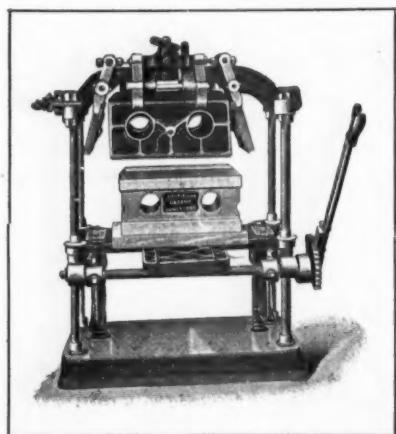
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Collapsible core; machine swings clear of block, making it easily removed. Boards having cleats prevent cracking, rock faced or natural stone, easily changed.

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The Cottom Artificial Stone Blocks made on the

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Are Superior to All Others.

They are laid in the wall by pouring semi-liquid cement into and between them, the process being covered by patent, making A PERFECT WALL. For information address, :: :: ::

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The Komnick System Sandstone Brick Machinery.

52 Plants running in Europe and 9 plants running in the United States, others being installed in both countries.



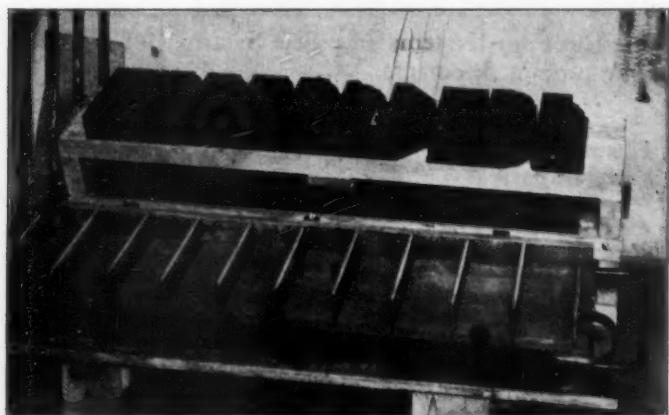
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Cement or Lime Brick Machine



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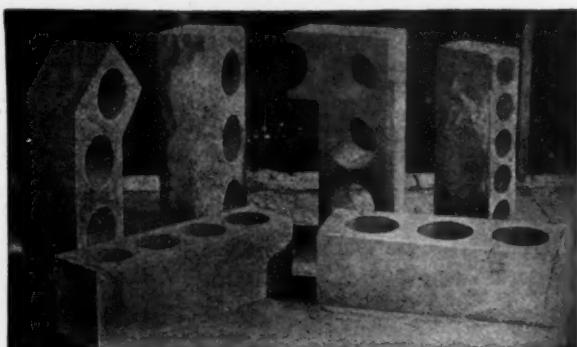
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STONE CHEAPER THAN BRICK.

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A sure mon-
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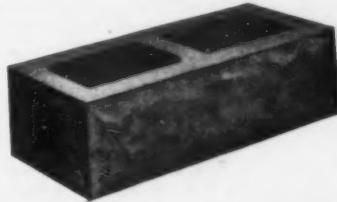
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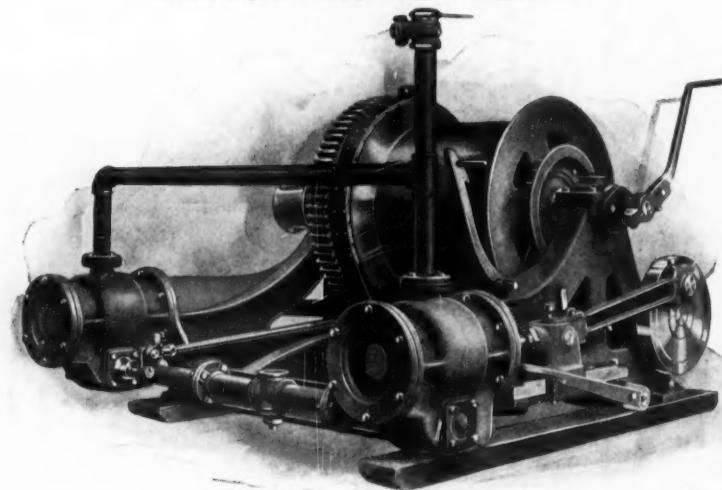
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You Decide Those Points Yourselves.
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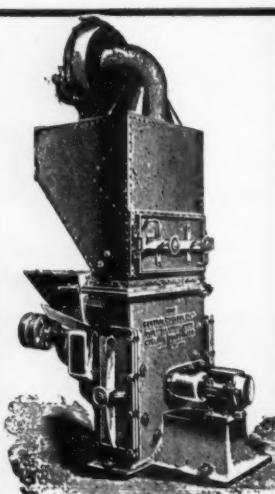
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STRAKER'S PATENT.

AIR SEPARATION—The product can be made of any desired fineness without sieving.

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OUTPUT per H. P. per hour of the Cyclone Mills is much larger than that of any other mills.

We build **SCREEN SEPARATION MILLS** too.

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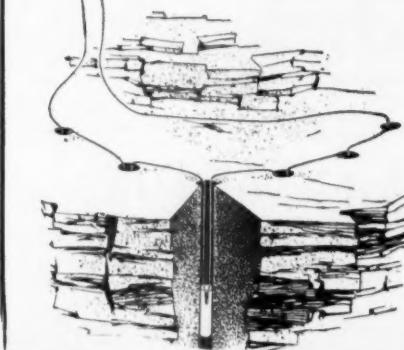
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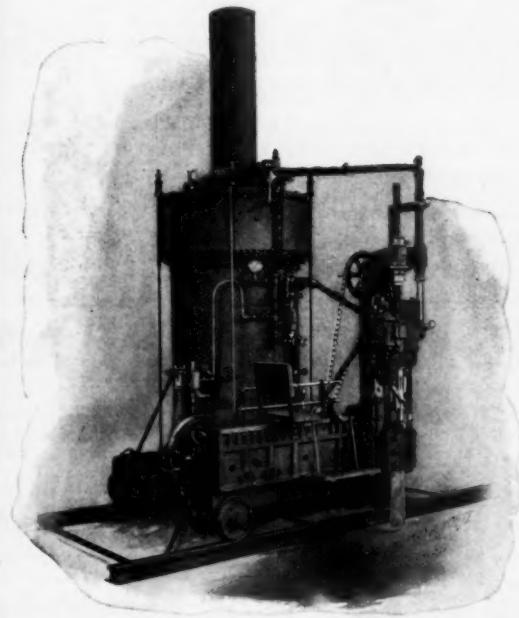
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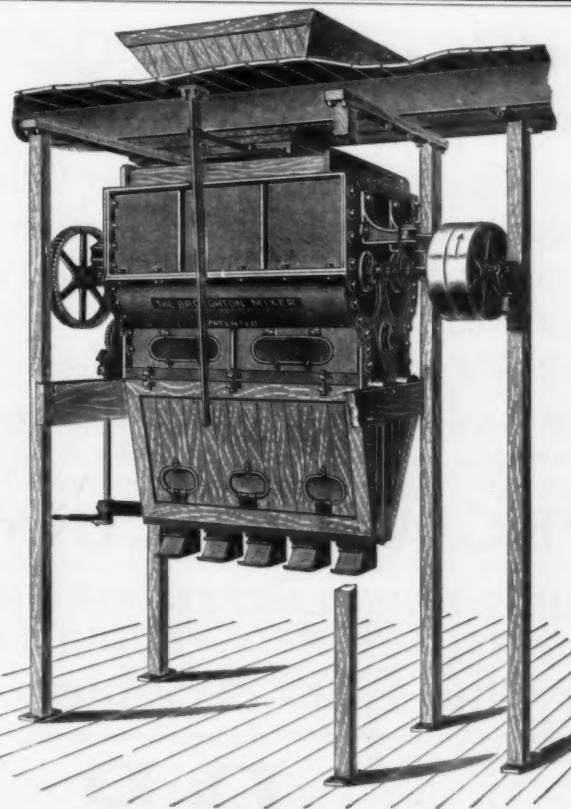


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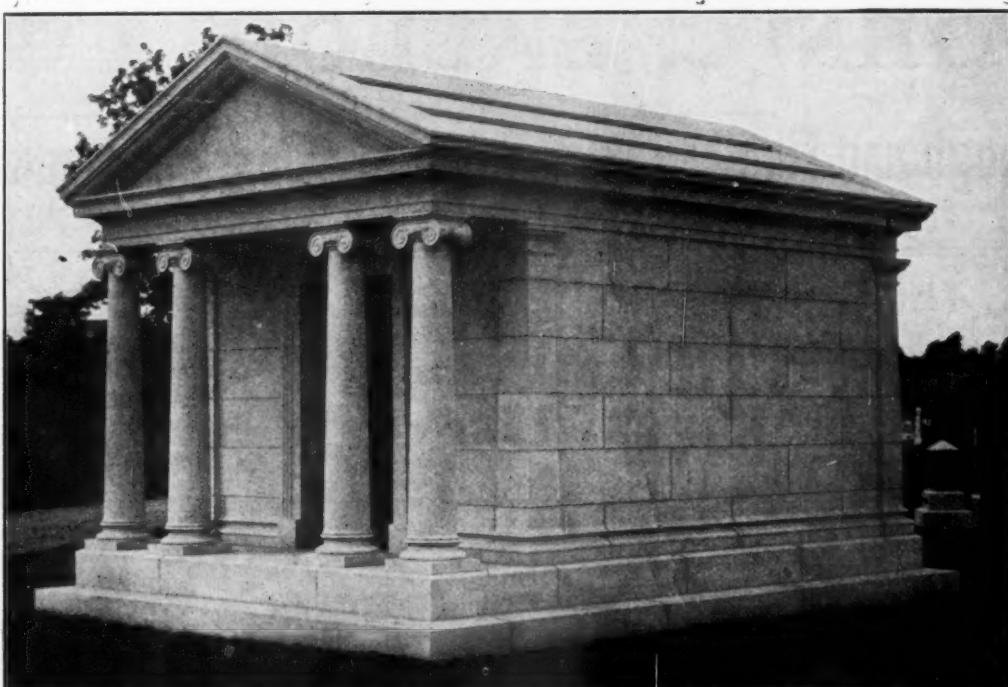
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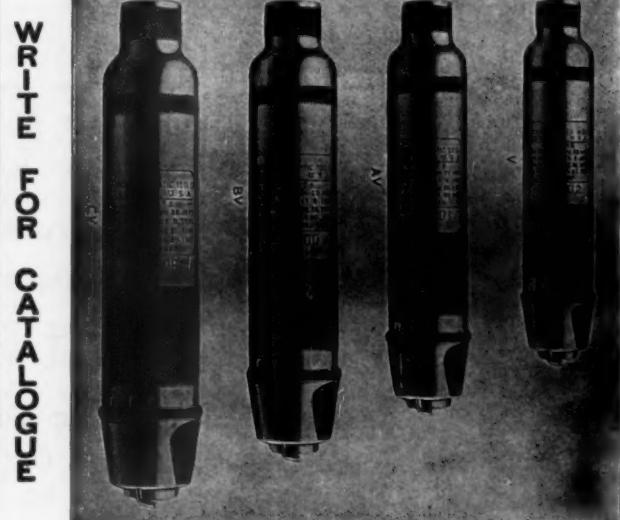
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Complete Plants Furnished.

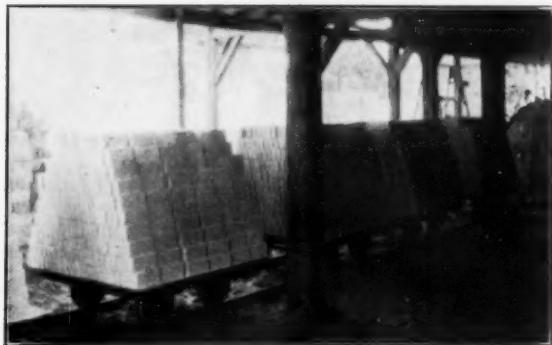
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SAND-LIME BRICK

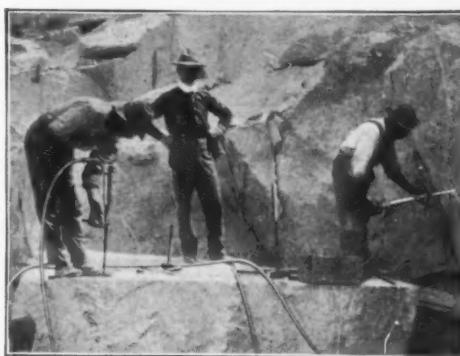
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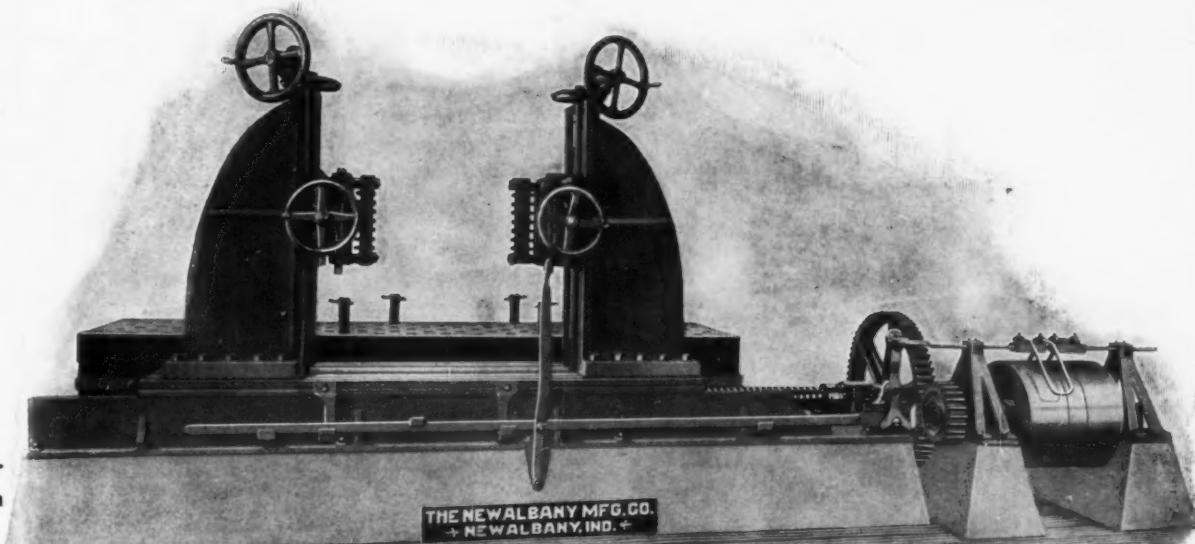
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OUR SPECIALTIES

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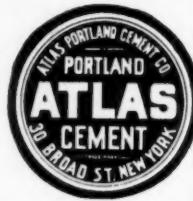
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Switches, Frogs, Rail,
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